



OVERHEAD  
HANDLING  
EQUIPMENT

AMERICAN  
MONORAIL COMPANY



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T. C. ALEXANDER





## Catalog "D"

(REVISED JANUARY 1, 1948)

This book presents two complete lines of equipment for overhead handling systems.

### Standard (MonoRail) Line

Loads up to and including two tons are carried on American MonoRail Twin-Section FABRICATED Track. Complete description of carriers, cranes and accessories shown in the first section of the book.

### RailMaster (Heavy) Line

Continued demand for heavier capacities led to the development of the RailMaster line. This equipment is available for handling loads up to 5 tons on RailMaster track systems and 10 tons on RailMaster double bridge cranes. Illustrations showing this new line begin on page 125.

### Power Operated Equipment

Full development of the MonoTractor rubber wheel drive brings electric propulsion of carriers and cranes to all capacities listed. New devices permit wide range of automatic operation and control possibilities.

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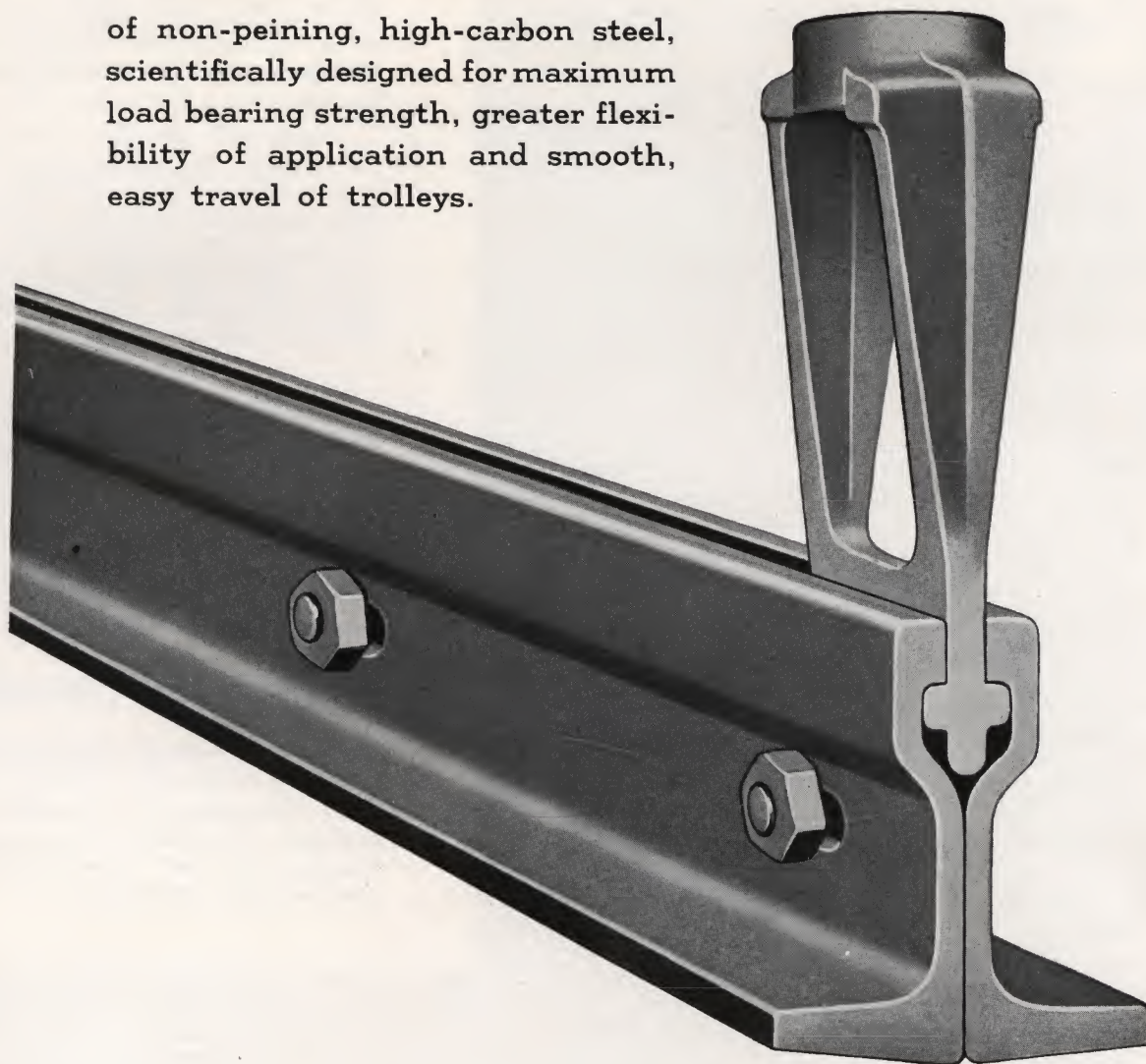
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# AMERICAN MONORAIL

## A Fabricated Track

of non-peining, high-carbon steel, scientifically designed for maximum load bearing strength, greater flexibility of application and smooth, easy travel of trolleys.



## Points of Advantage

- |                            |                            |
|----------------------------|----------------------------|
| 1. Twin Section Track      | 5. Over-lapping Splice     |
| 2. One Piece Hanger        | 6. Narrow Track Flanges    |
| 3. Balanced Section Design | 7. Compact Electrification |
| 4. Heavy Web Thickness     | 8. Rubber Wheel Drive      |



# AMERICAN

## Eight Points

### Twin Section Track

Twin sections of specially rolled high carbon steel are bolted together to form American MonoRail track. This assures easy bending of curves and flexible application throughout the system.

### One Piece Hangers

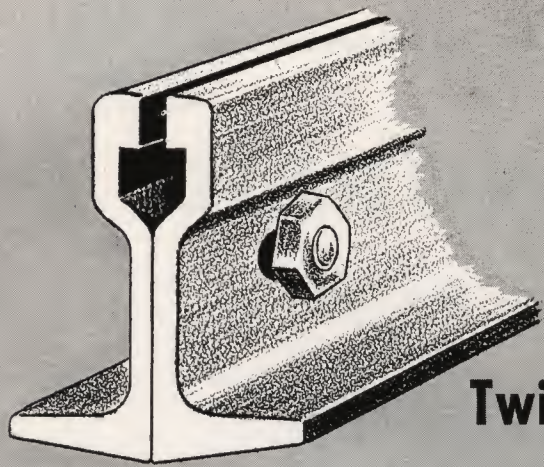
Drop forged hangers are anchored in the rail head to provide 7-ton strength at all points where the heaviest loads must be supported. They cannot shake loose or interfere with trolley wheels.

### Balanced Section Design

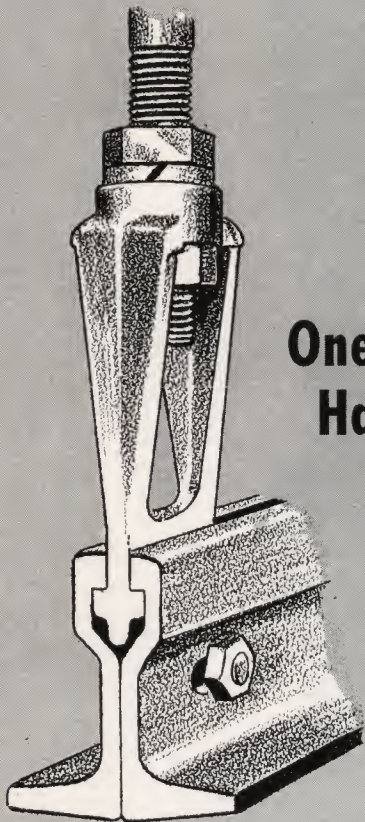
When assembled, American MonoRail track has as much metal in the head of the rail as in the flanges. This balanced section assures maximum carrying strength from the special steel used. The extra wide head also acts as a compression flange to offset deflection.

### Heavy Web Thickness

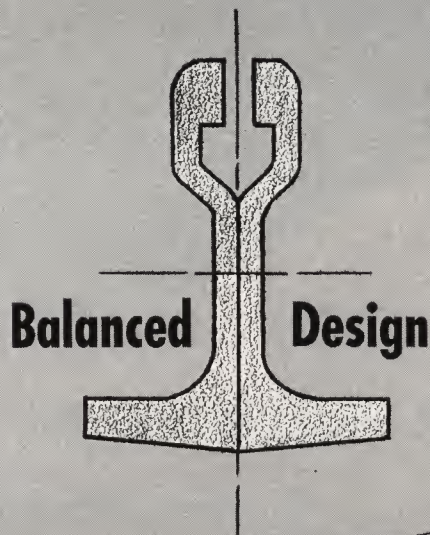
Twin section assembly doubles the web thickness at the point carrying the total load. This extra steel provides a high modulus of strength requiring fewer hangers and less superstructure for standard track suspension.



**Twin Section  
Track**

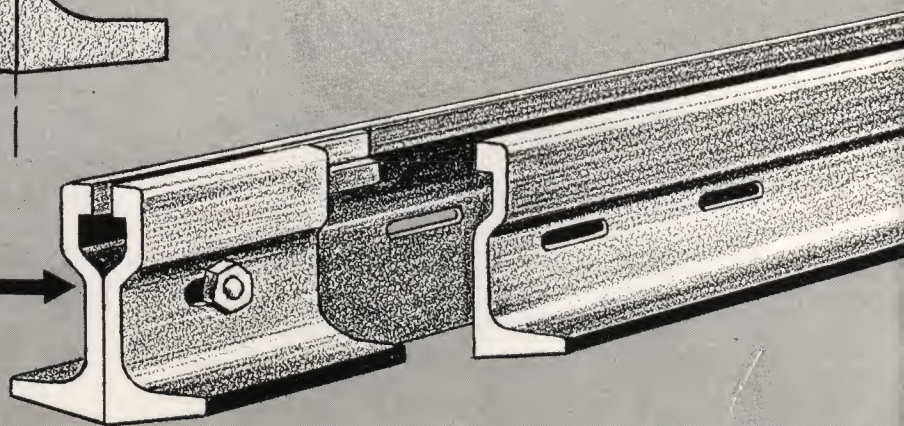


**One Piece  
Hanger**



**Balanced  
Design**

**Heavy Web Thickness** →





# MONORAIL

## of Advantage

### Over-lapping Splice

Twin section track assemblies with ends offset 18 inches. Sections thus overlapped and bolted together form a continuous track for jolt-free trolley travel. No clamps on splice plate are required.

### Narrow Track Flanges

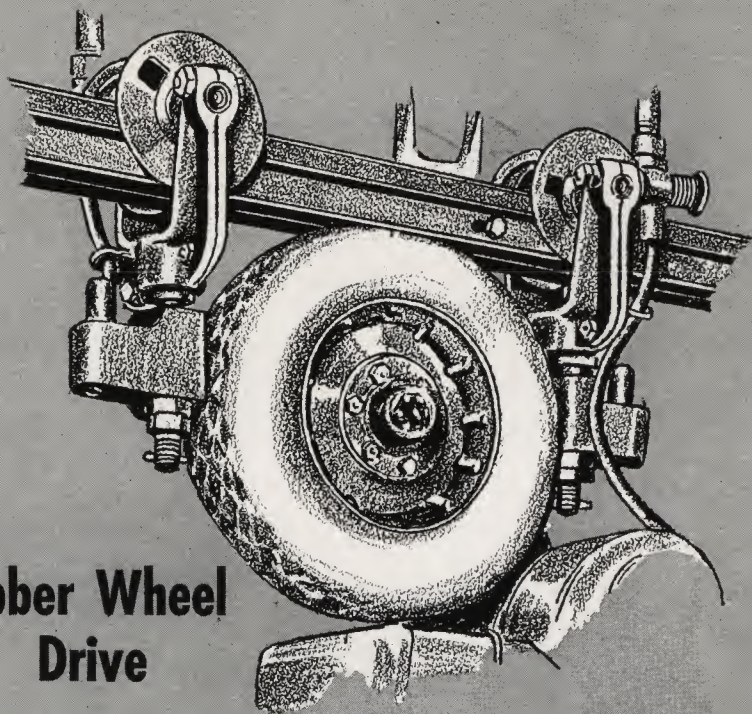
With projecting hangers and clamps eliminated, trolleys are brought in close to the web of the rail, thus the narrow track flange works as a true load carrying member rather than to resist flange stresses from loads carried at greater distance from the web.

### Compact Electrification

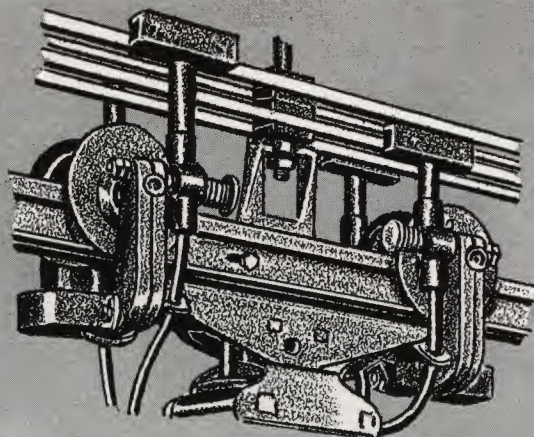
From rigid conductor bars, clamped in close above the track, current is fed through sliding shoe collectors to power driven units operating throughout the system. No special apparatus required for travel through switches. Unlimited control features are available.

### Rubber Wheel Drive

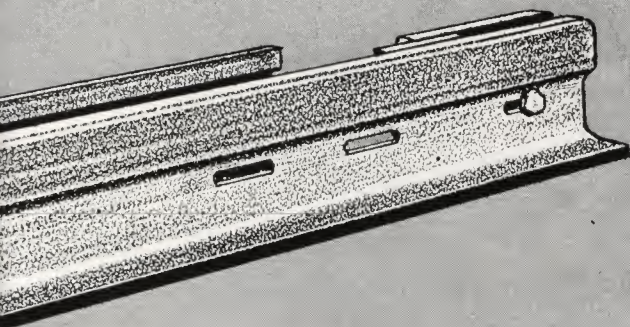
Electric motor drives wheel equipped with rubber tire contacted against the bottom of the track. The increased tractive area of the rubber to steel contact, delivers tremendous draw bar pull for horizontal movement of carriers or cranes on any smooth bottom track.



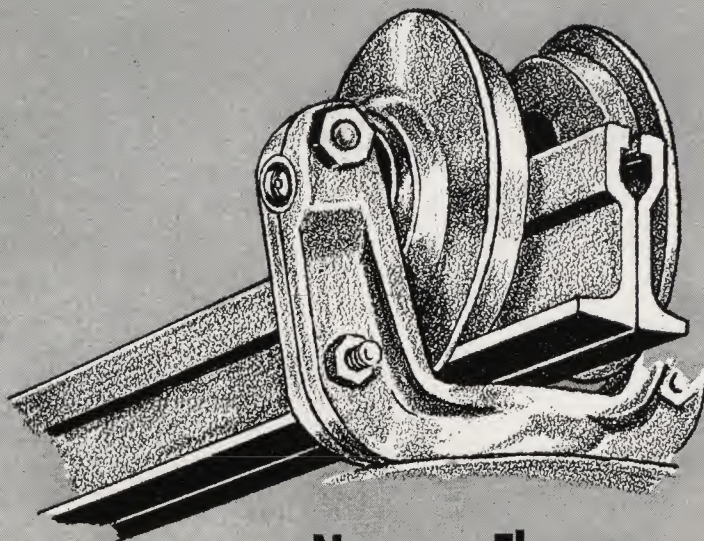
**Rubber Wheel Drive**



**Compact Electrification**



**Overlapping Splice**

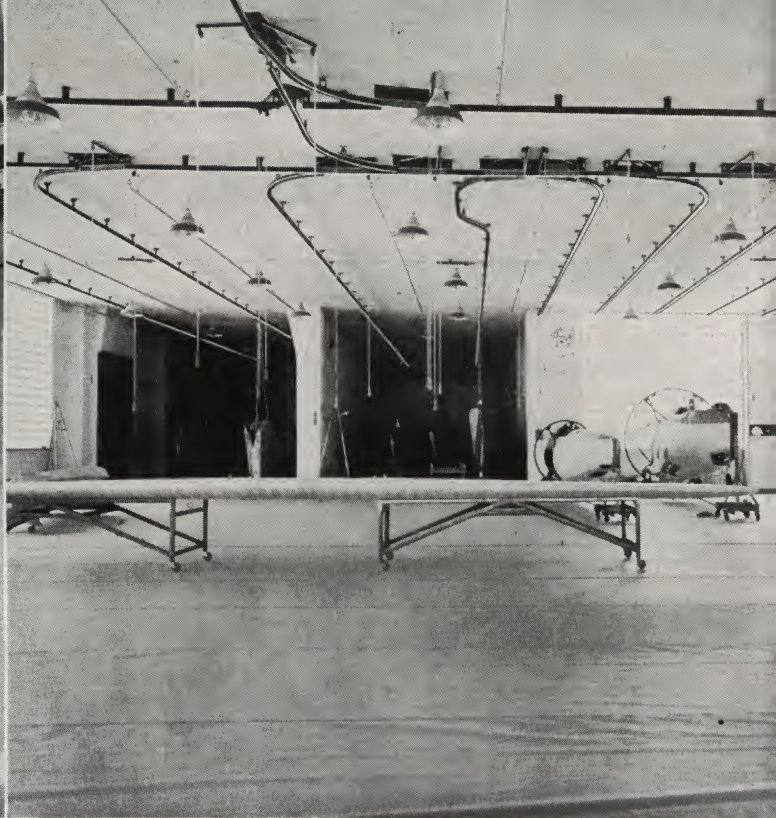


**Narrow Flanges**





Twelve lines of track serve entire dope shop interlocking with crane for outside transfer.



Track system in air depot covers entire shop area and dope booths with spur tracks.

# AMERICAN MONORAIL



Part of extensive crane system in assembly plant. Twin bridge motor operated crane, with manual crane, carries large hull up and over to final assembly.

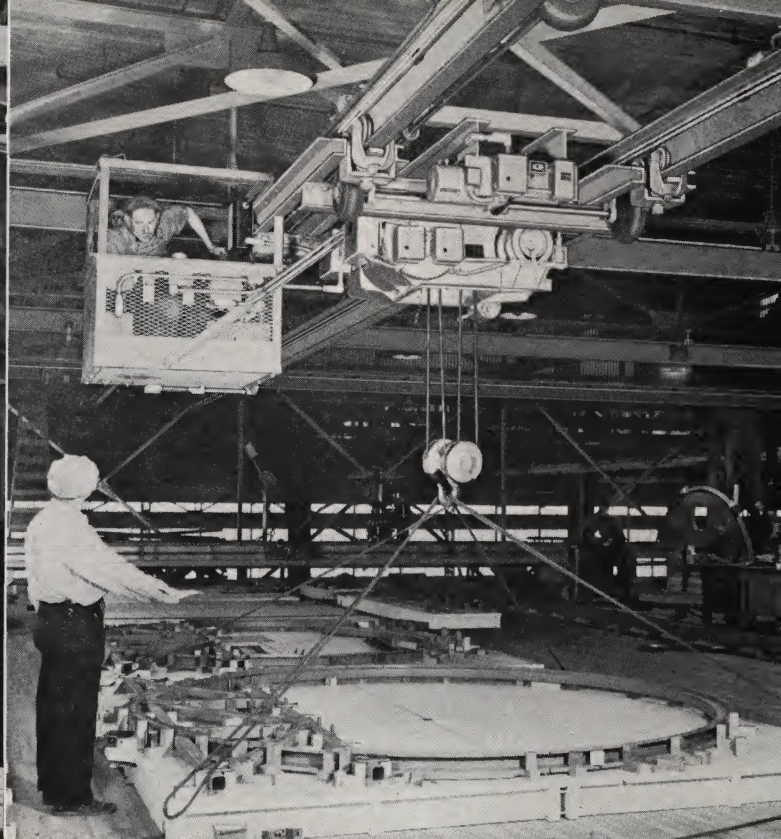


This 162 ft. double bridge crane is propelled by a single motor with rubber drive wheels under each runway.





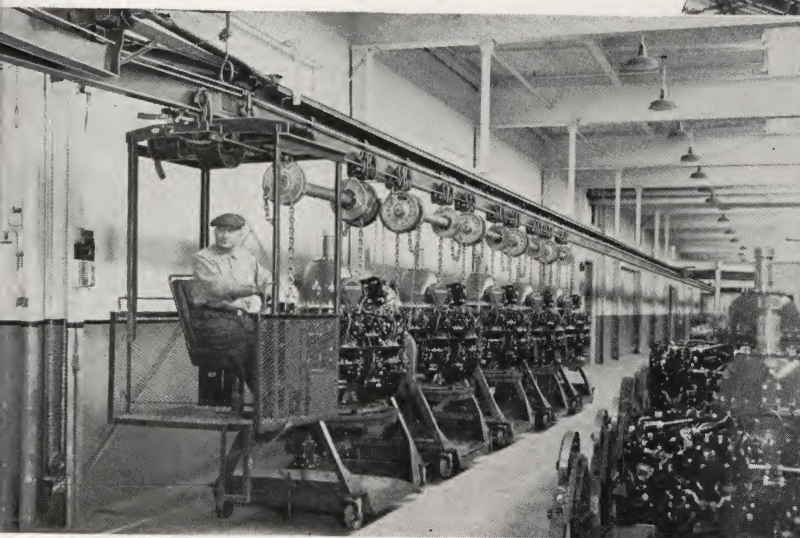
Two-hoist crane enables operator to lift and rock basket cleaning tube parts thoroughly.



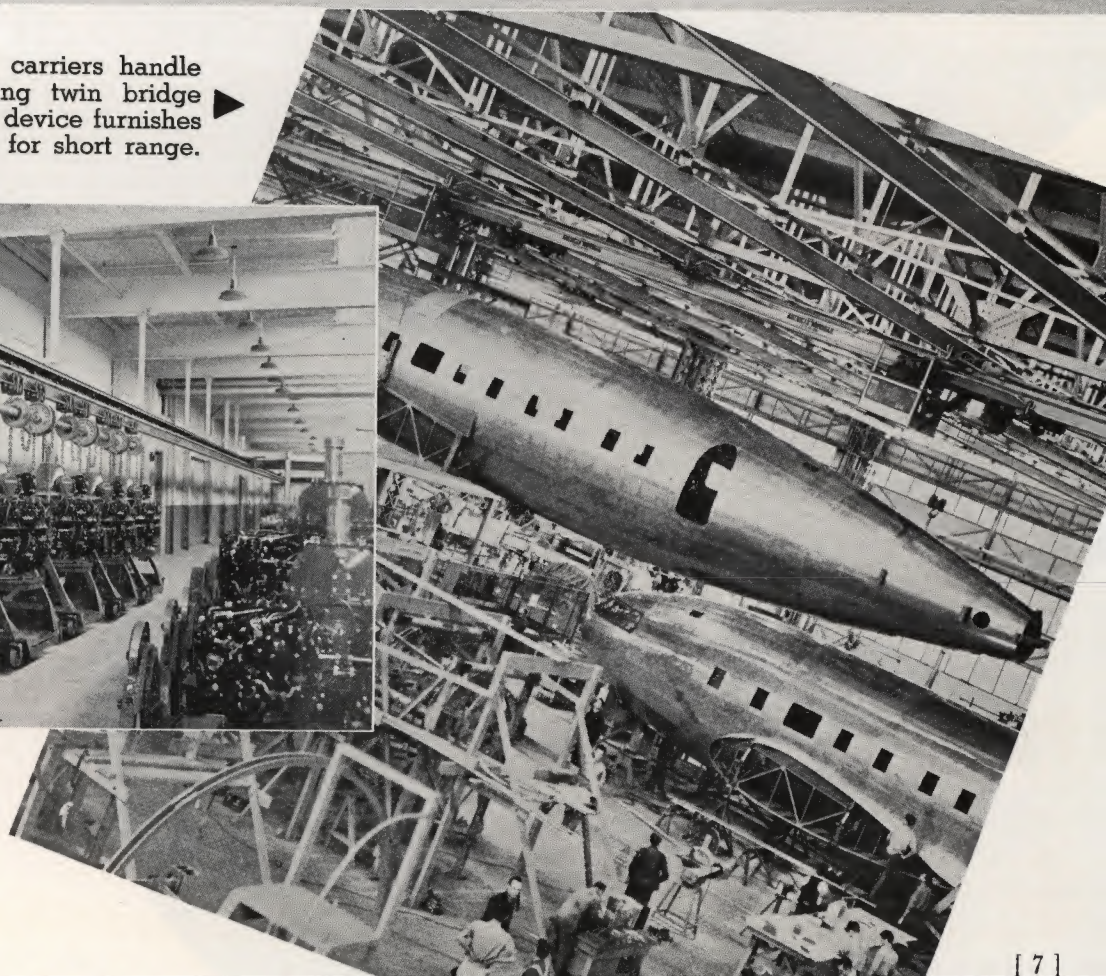
Special cab-carrier furnishes hook clearance of  $3\frac{1}{2}$  feet from bottom of crane bridge rails.

# IN AIRCRAFT PLANTS

Two 5-ton motor driven carriers handle huge hull on interlocking twin bridge cranes. Special microlift device furnishes lowering speed of 2 fpm for short range. ▶



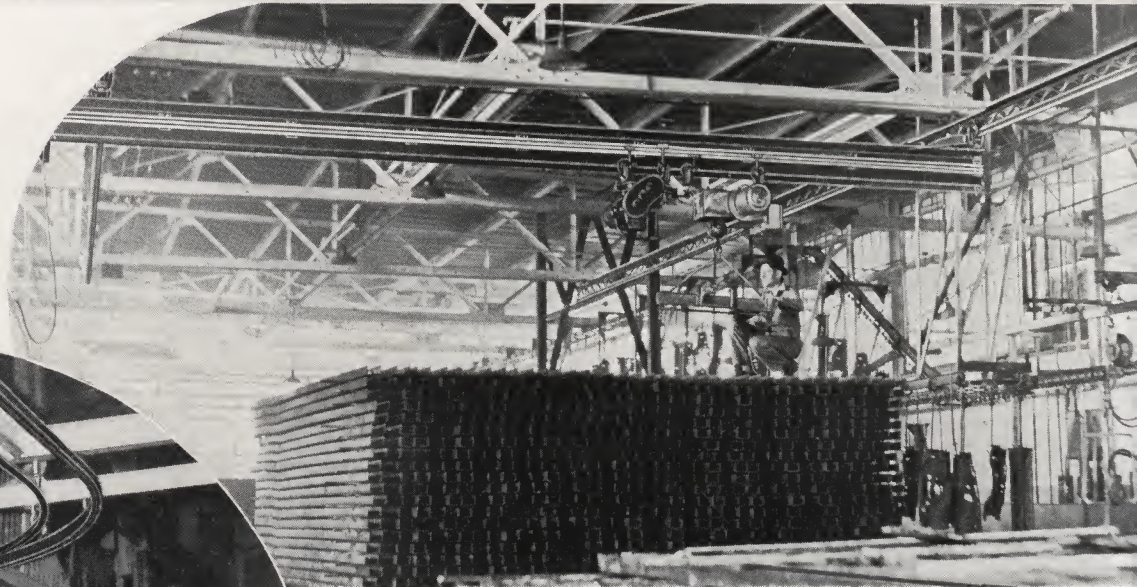
Motor driven cab propels train of twin hook hoists carrying motor assemblies to test room.



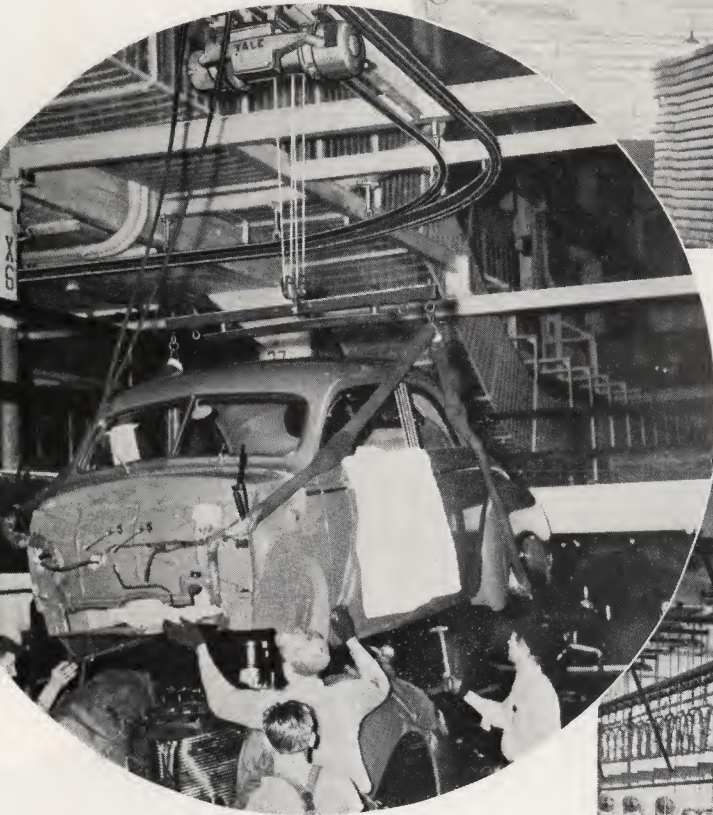


# OVERHEAD HANDLING

MonoRail feeds bodies to chassis on assembly line. Special electrification for hoist permits maximum headroom under compact conditions.



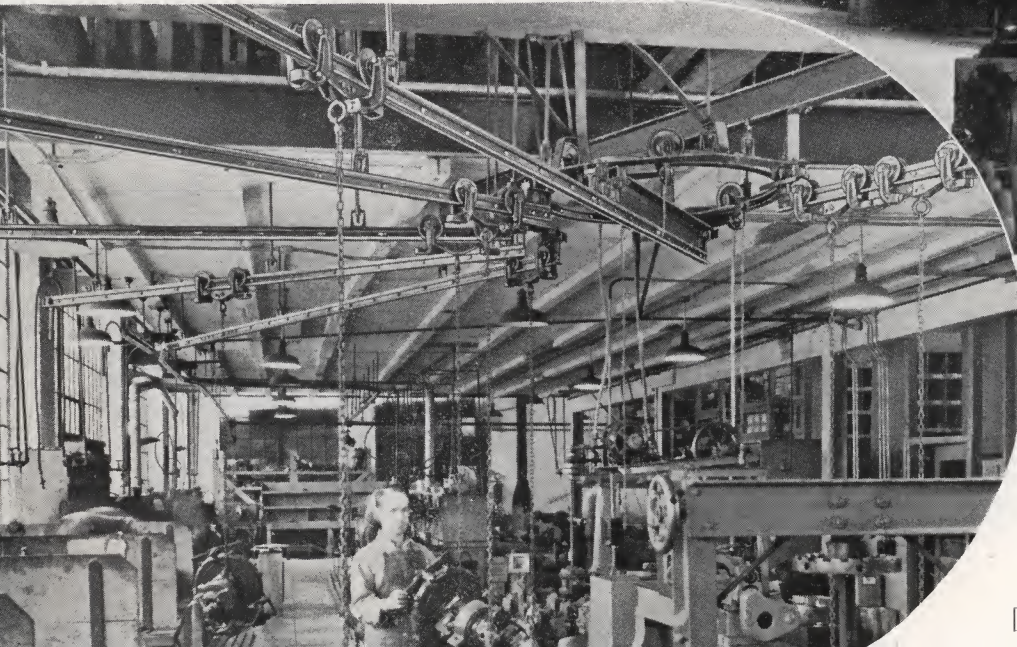
Chassis frames are piled twice as high with manual crane, MonoTractor and electric hoist.



Tracks radiate from swivelling crane for easy handling to work benches.

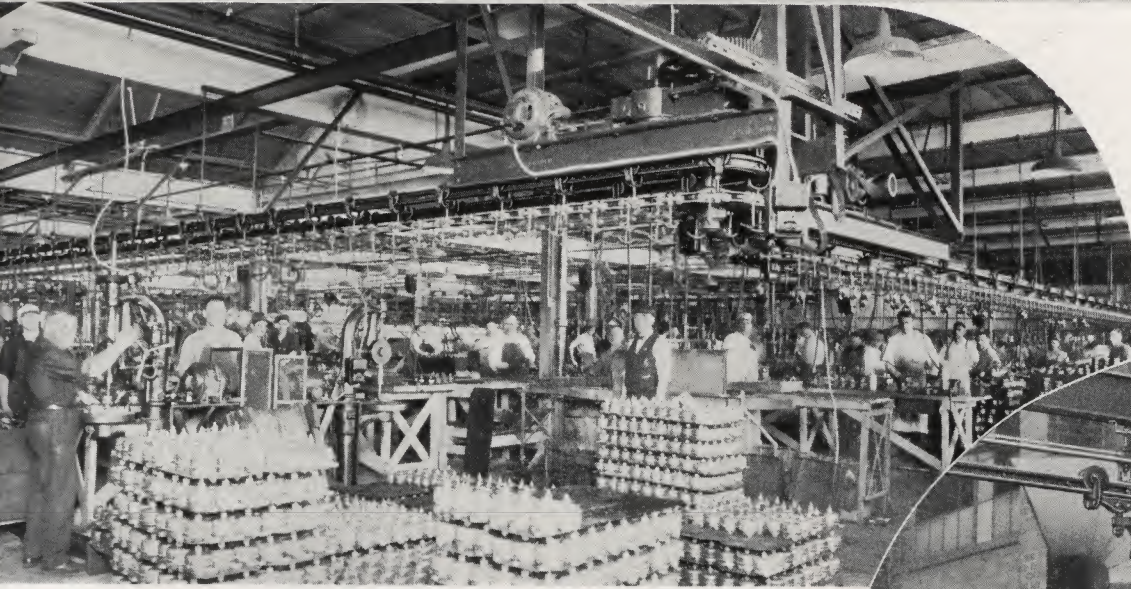


Two-level system for gravity return of empty carriers. Crankshafts move forward for operation between two long rows of machines.



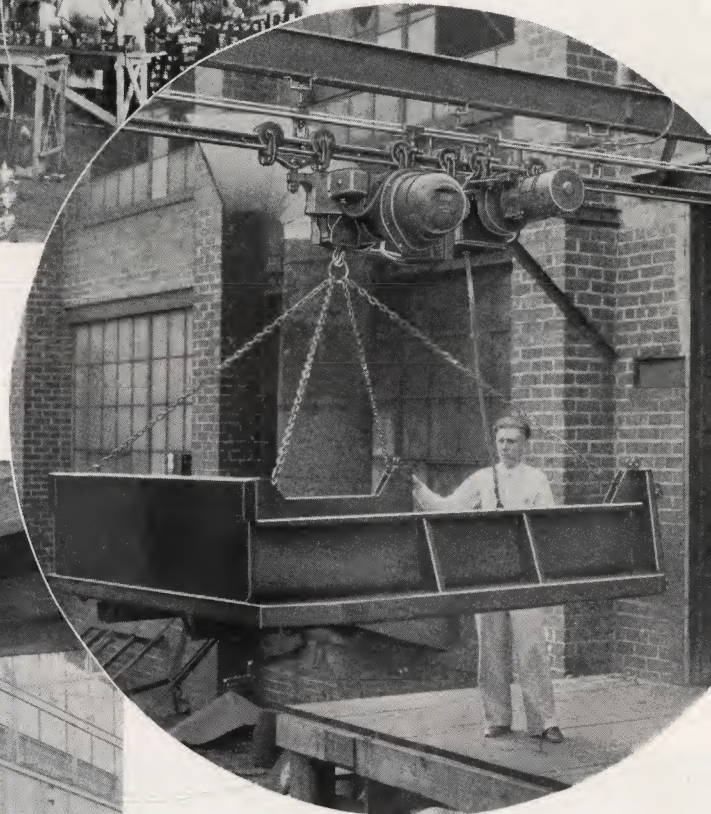


# OF AUTOMOTIVE PARTS

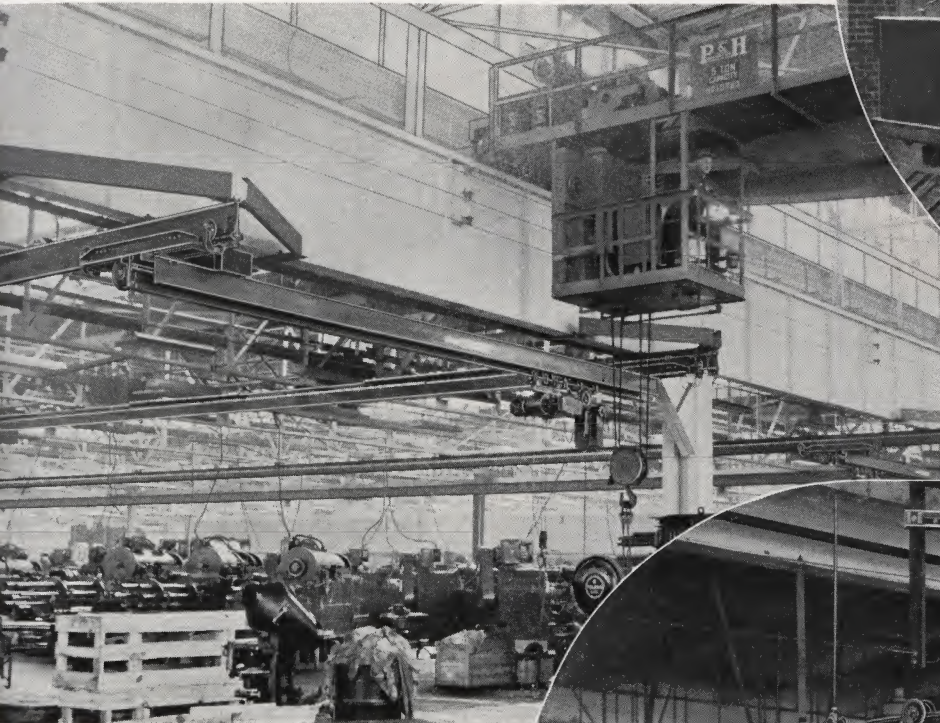


High carbon track and precision bearing trolleys result in long, low cost operation of system.

MonoTractor drive with pushbutton station, furnishes easy control of heavy cumbersome loads through horizontal and vertical movement.



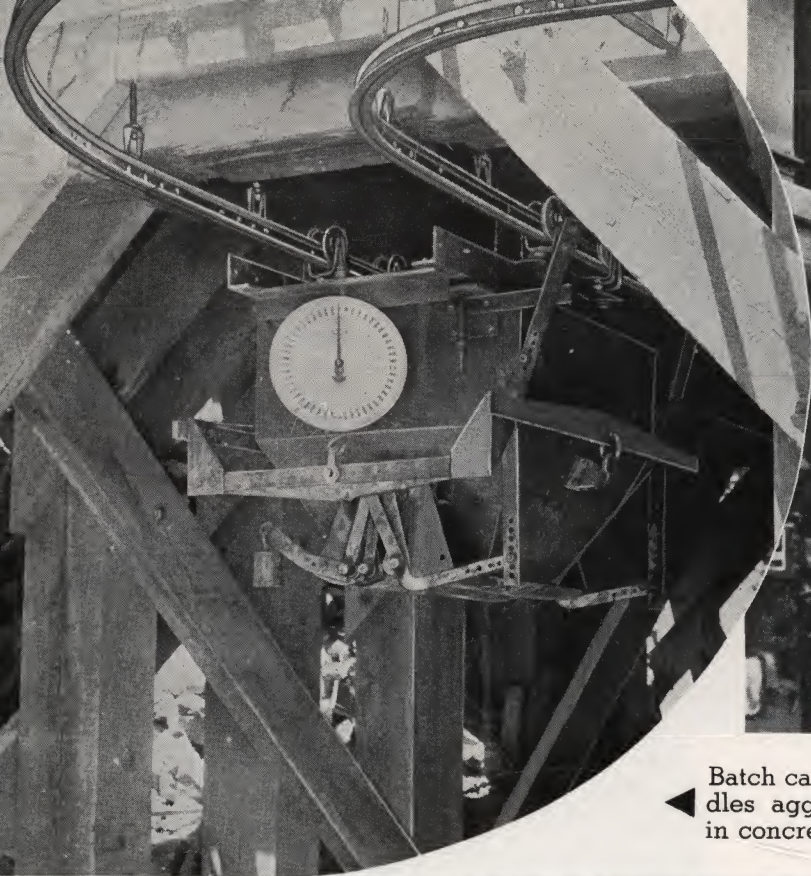
Air hoist removes motors from storage track to chassis on assembly line.



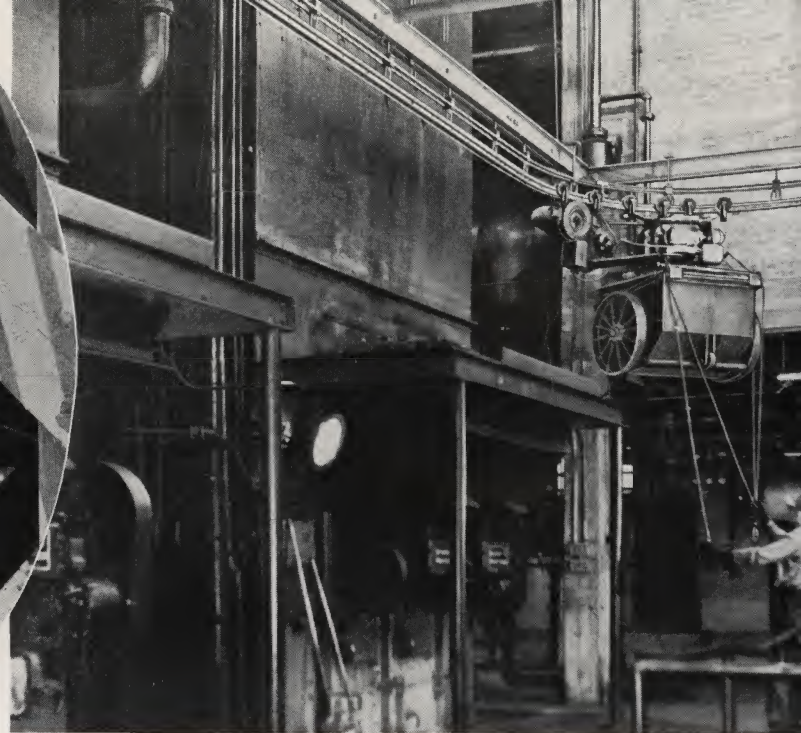
Inter-bay transfer of loads made possible by extending runway for MonoRail crane hook service beneath area covered by over-riding crane.







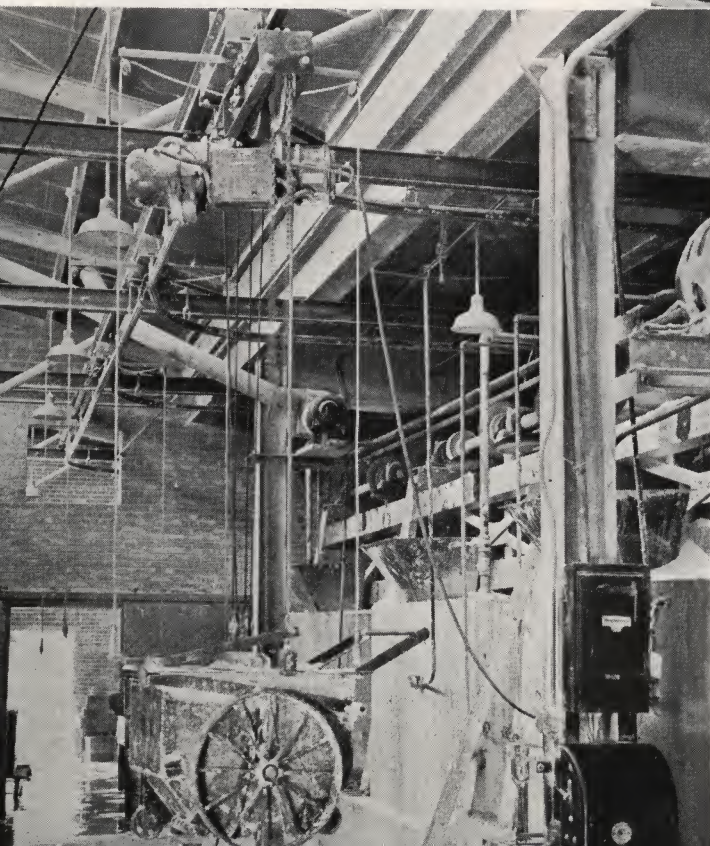
Batch car weighs and handles aggregate to mixers in concrete plant.



Stokers kept fueled with MonoTractor, hoist and bottom dump bucket.

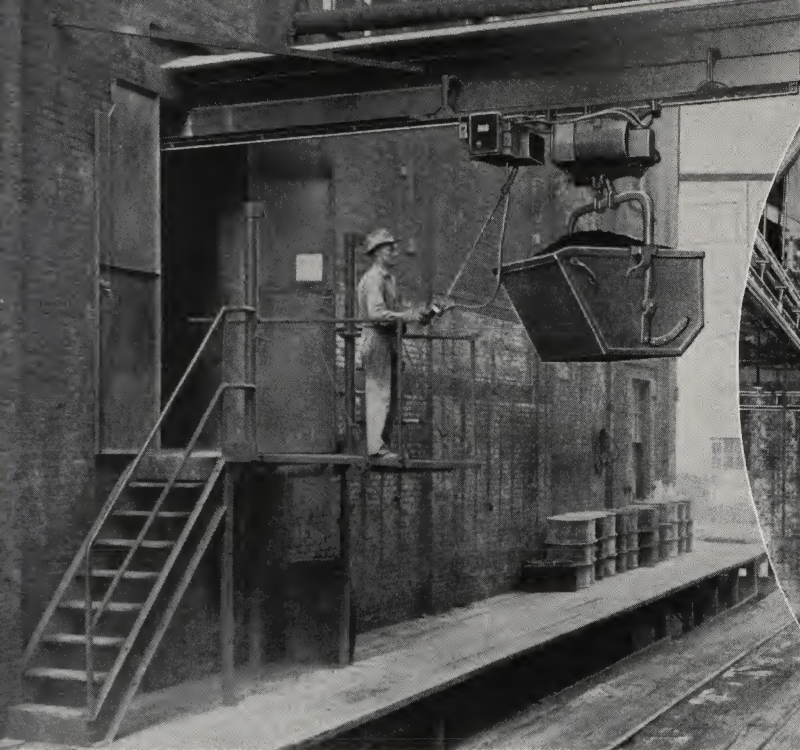
# OVERHEAD HANDLING

Hand propelled tractor unit with tag line electrification for hoist serves battery of mixers from trundle dump bucket.

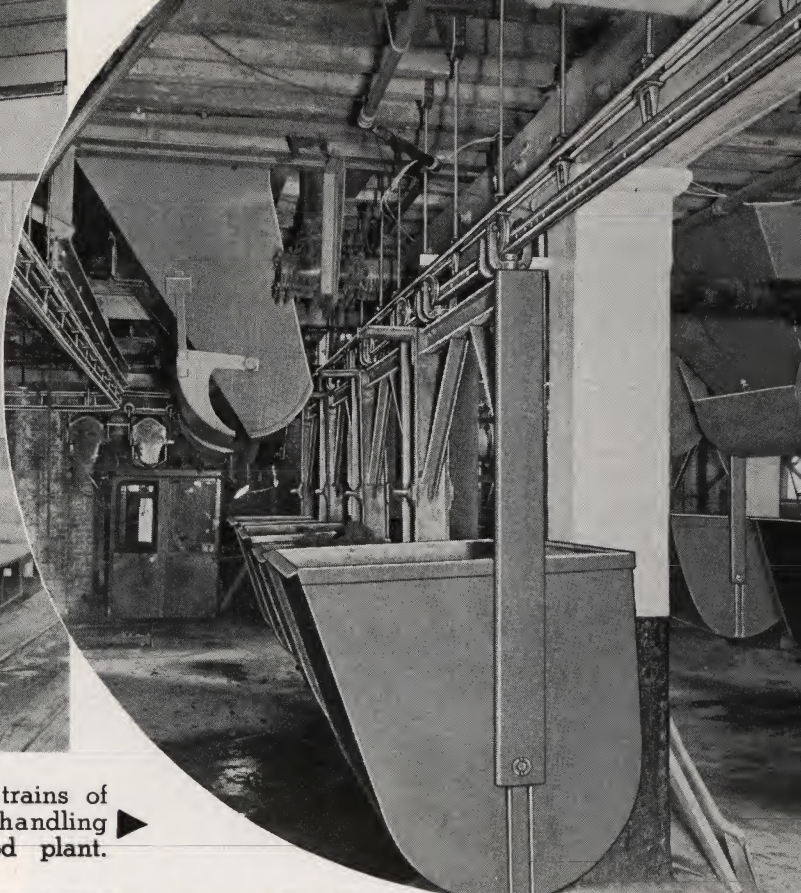


Light weight equipment for removal of sludge from drying beds at sewage disposal plant. This system eliminates damage to beds and unloads over driveways for easy handling.



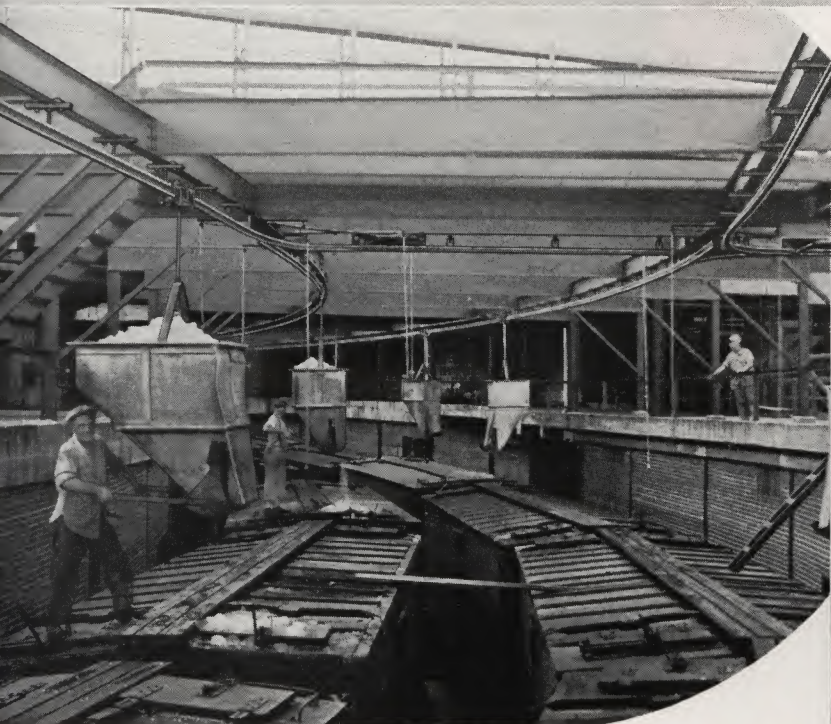


MonoTractor, hoist and dump bucket unit reduced handling costs 75%.



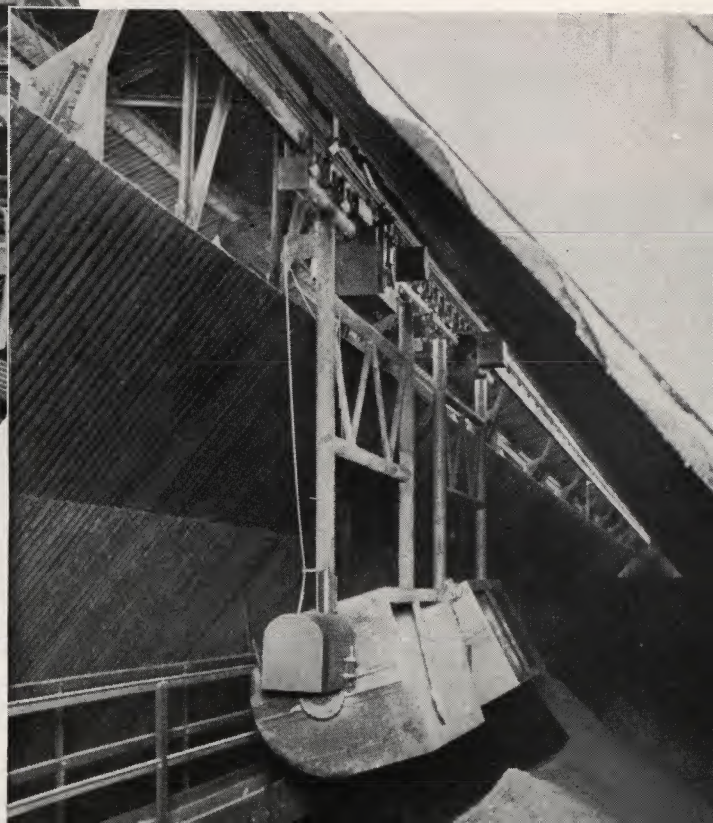
Power operated trains of buckets solve handling problems in food plant. ▶

# OF BULK MATERIALS



Handling ice to refrigerated cars quickly and safely with special dumps on MonoRail from ice machine. Operator reports saving of ice and handling costs with added safety to loaders.

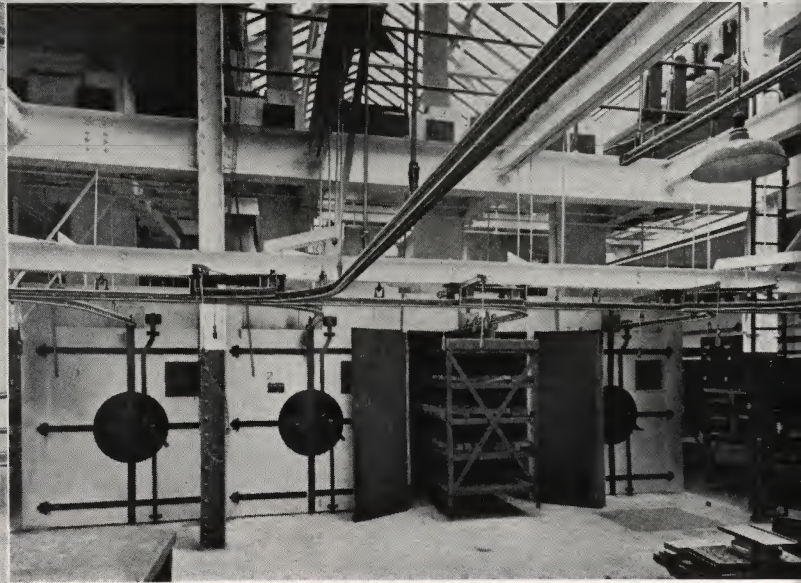
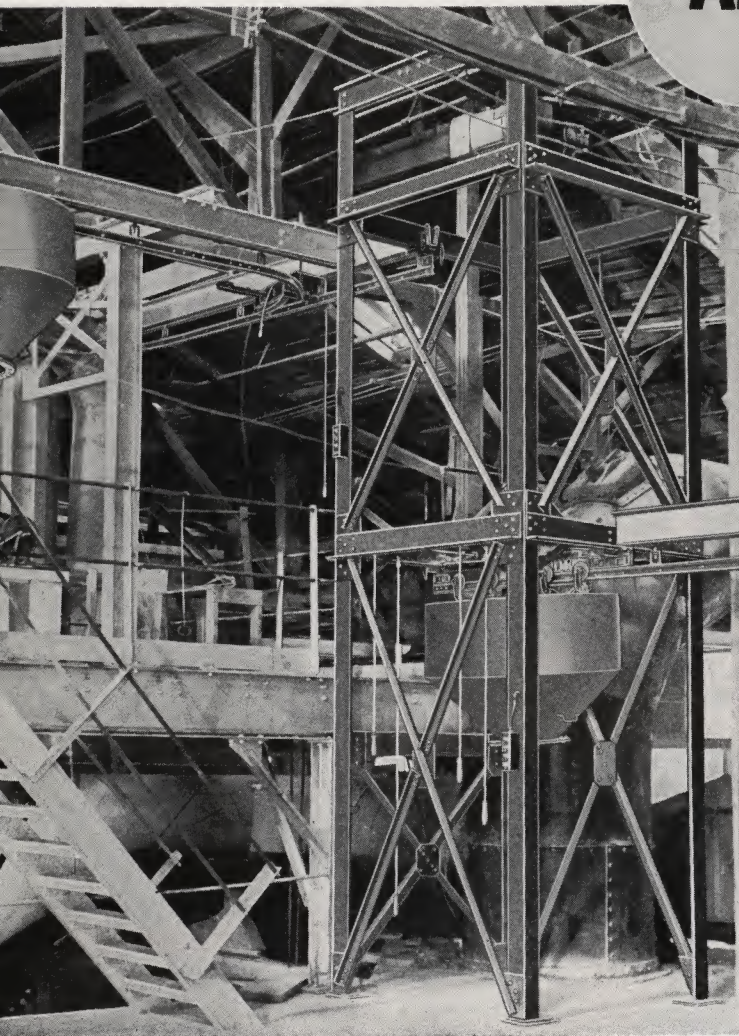
Automatic dispatch of self-dumping tubs with adjustable stops and automatic return maintains distribution in warehouse. ▼





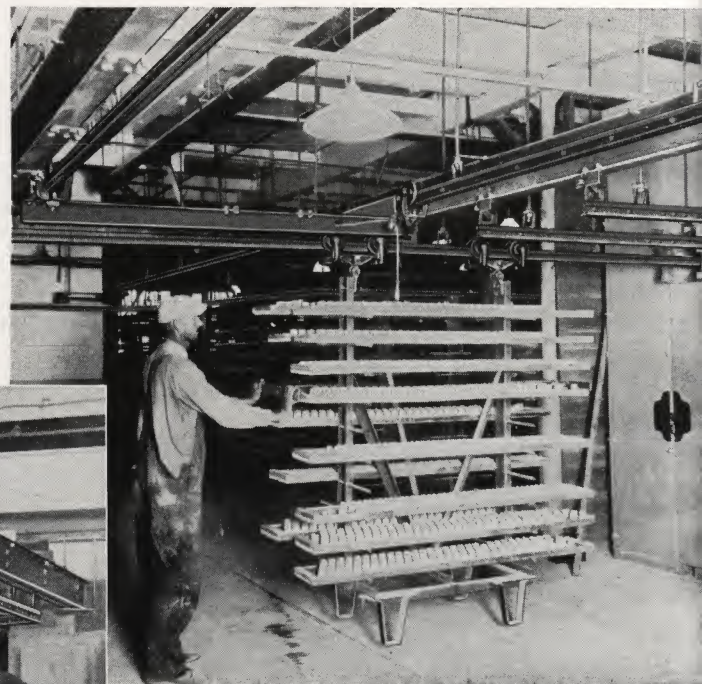
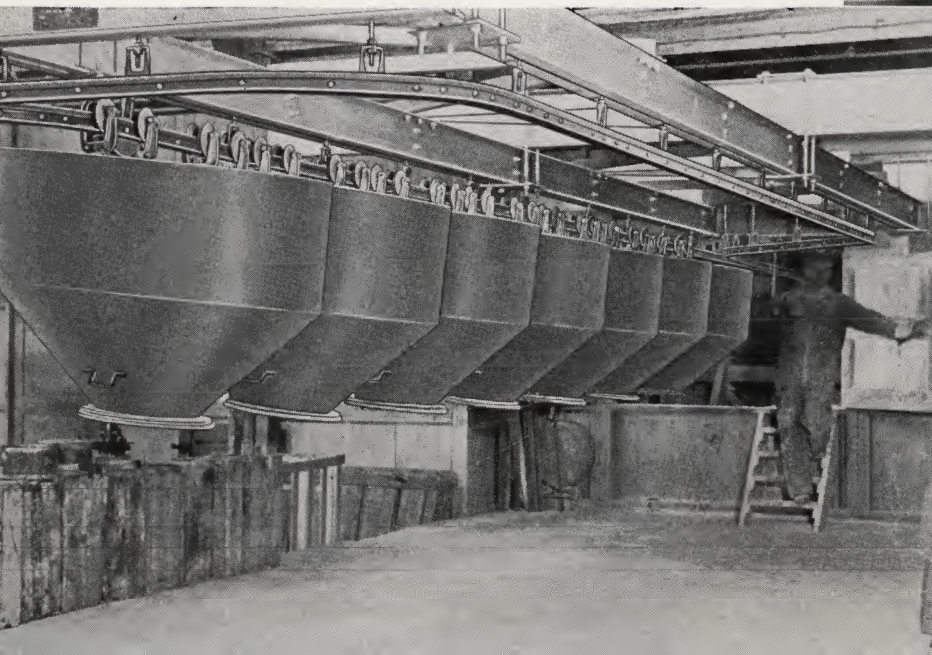
Lift tower takes special batch buckets in MonoRail track to upper level for transfer to dog house in glass plant.

# AMERICAN MONORAIL



Closures over doors allow passage of trolleys on MonoRail through dryers without heat loss.

Special bottom dump batch tubs on precision bearing trolleys move easily by hand with free swivel around curves and through switches.



Short crane interlocks with spur tracks for quick passage of racks through drying ovens.

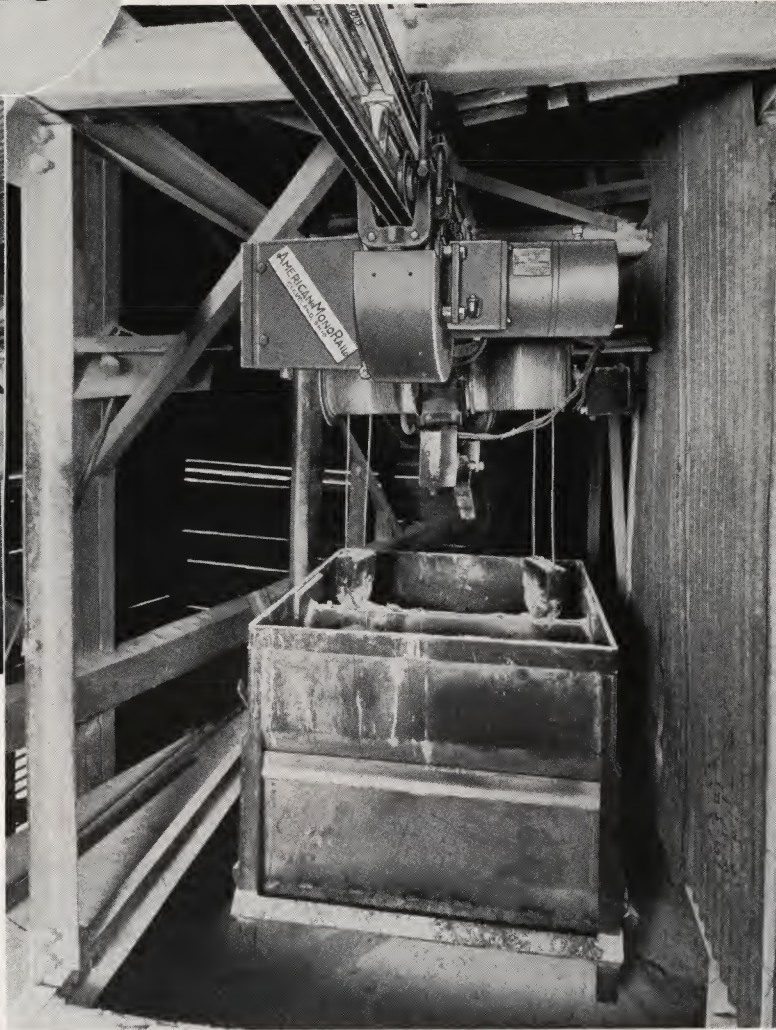


# IN CERAMIC PLANTS

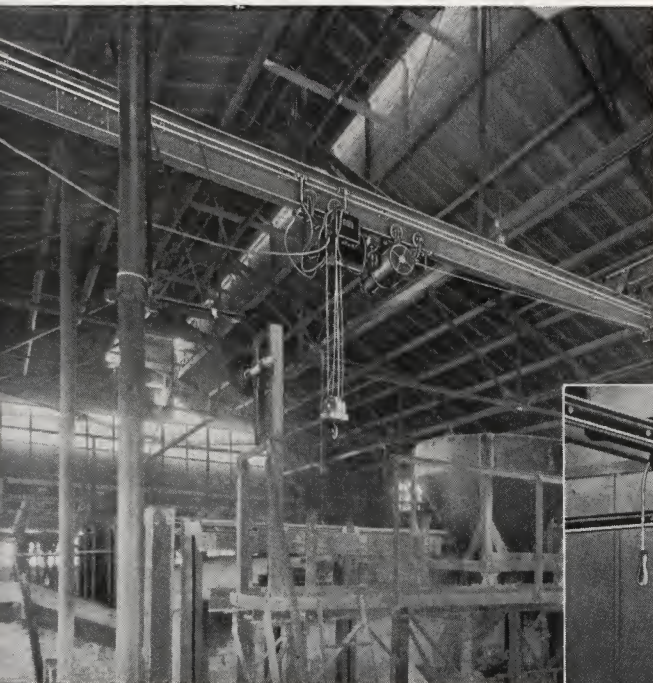
Remote dispatch of self dumping batch car prevents segregation of particles in the mix. Cars return automatically.



Clay from pug mills on special carriers reaches upper level on single post lift.



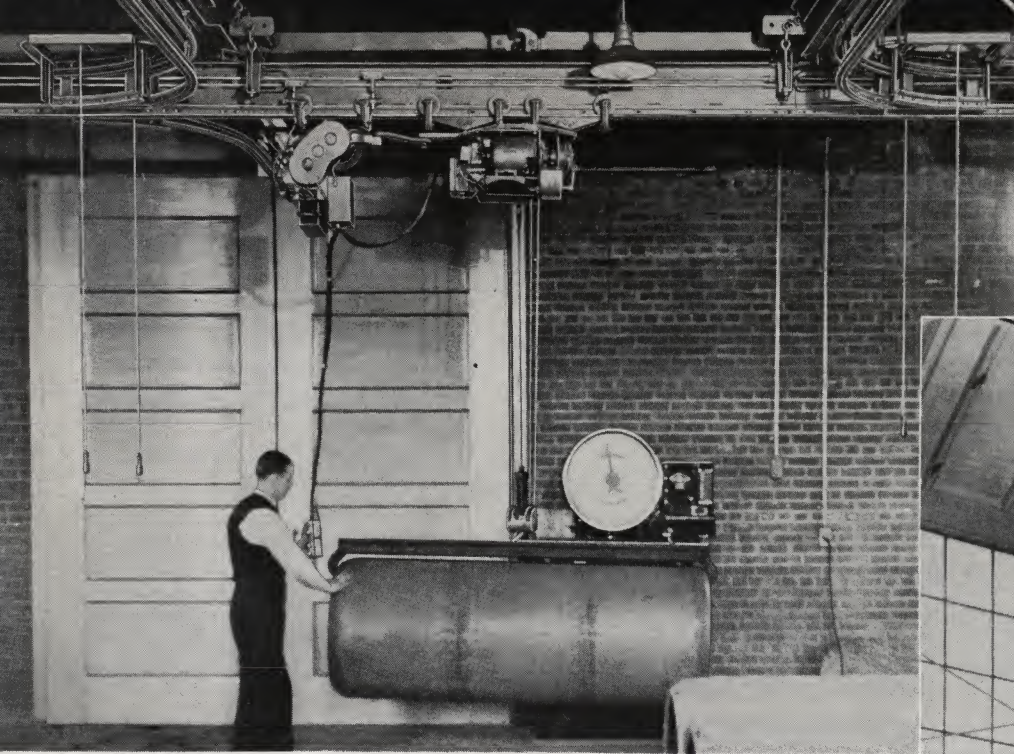
Glide switches assure compact track arrangement to serve variety of operations including passage through ovens without rehandling from racks.



Batch in tubs is fed to dog house from scale by MonoTractor unit on RailMaster track.

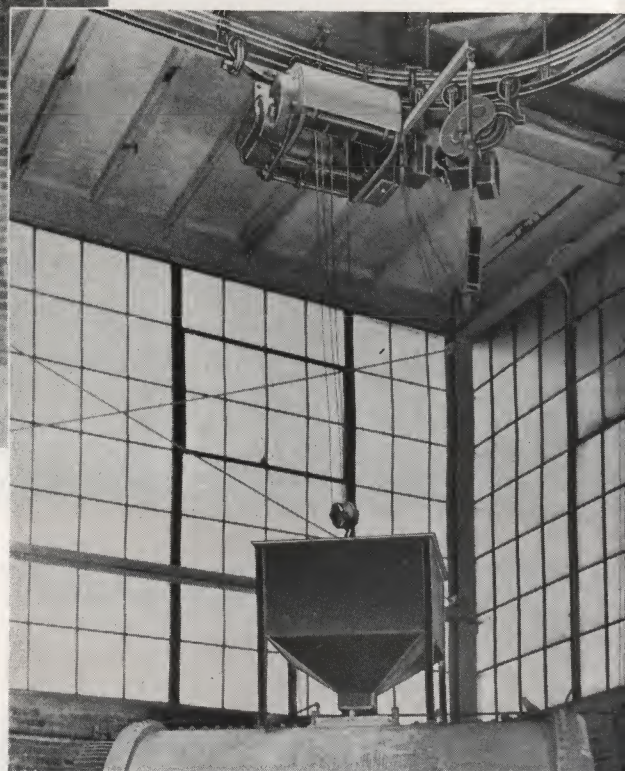




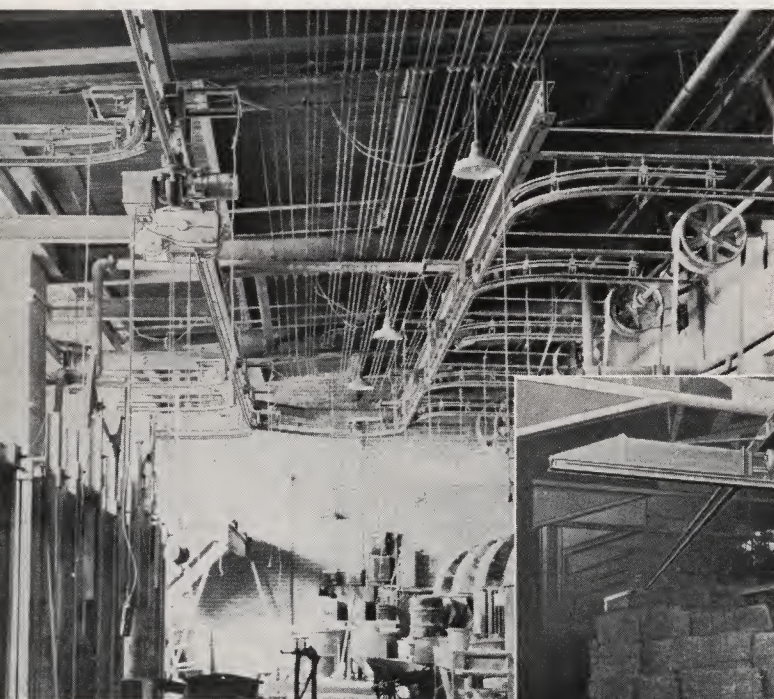


MonoRail scale section checks weight of drums handled over track system with MonoTractor and electric hoist operated by finger tip control.

Movement of loads to ball mill from extreme height made easy and accurate with American Mono-Tractor with remote control.



Overall coverage of storage area with high piling made possible by 4-motor crane. All movement including electric grab is controlled by operator in cab.



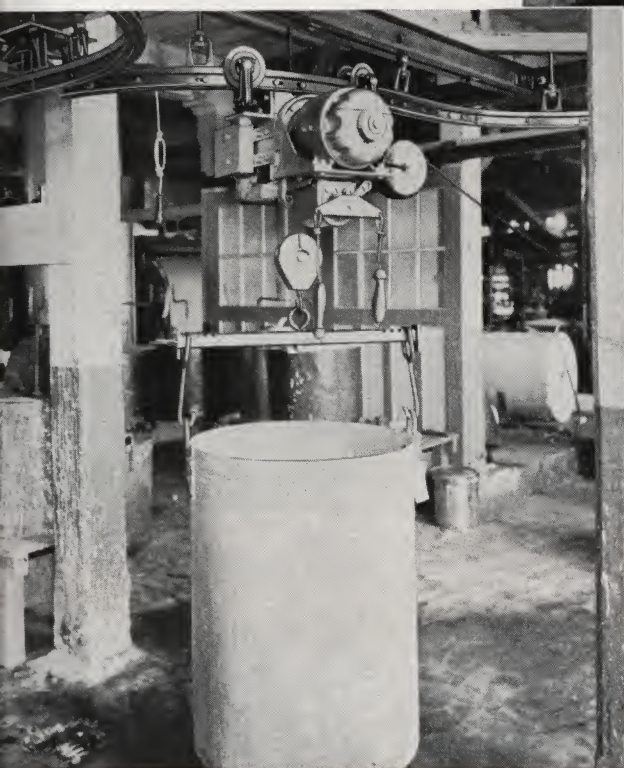
Heat and acid conditions have had little effect upon the operation of this Mono-Tractor over furnaces and ball mills in enamel plant.



# HANDLING CHEMICALS ON

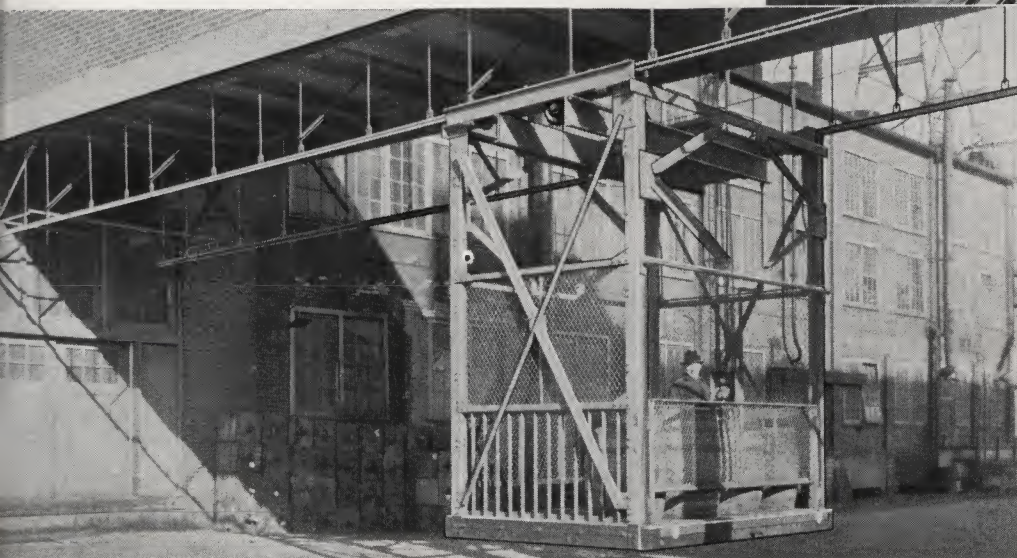
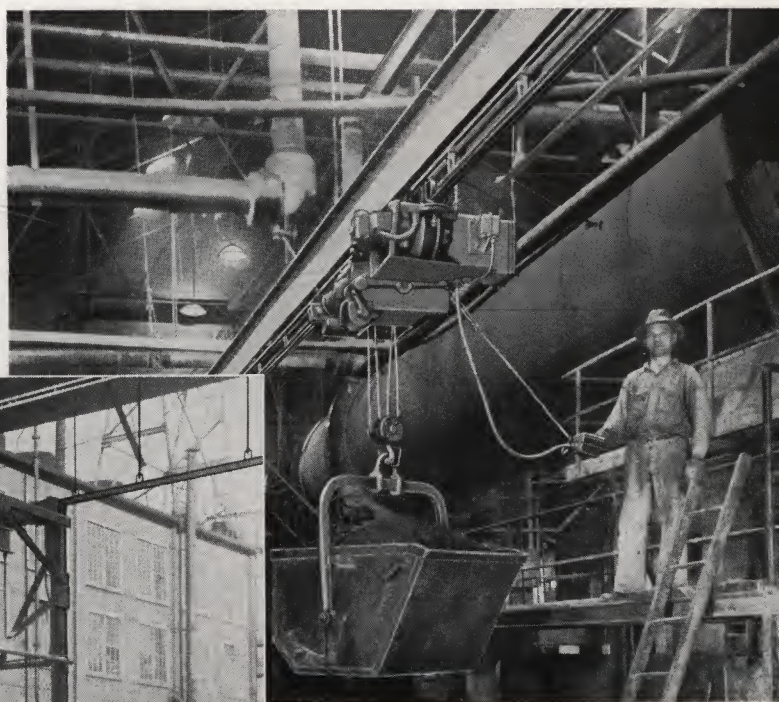


Simple system for moving liquids within a small area. Take-up reel electrifies hoist for pick up and pouring barrel to mixers.



Special grab and chain hoist with inexpensive track system furnishes easy handling of heavy drums from storage to chlorinators in small water pump plant.

Travelling cage unit handles transfer of heavy barrels over roadways between buildings. Rubber wheel drive assures accurate stopping at each entrance.

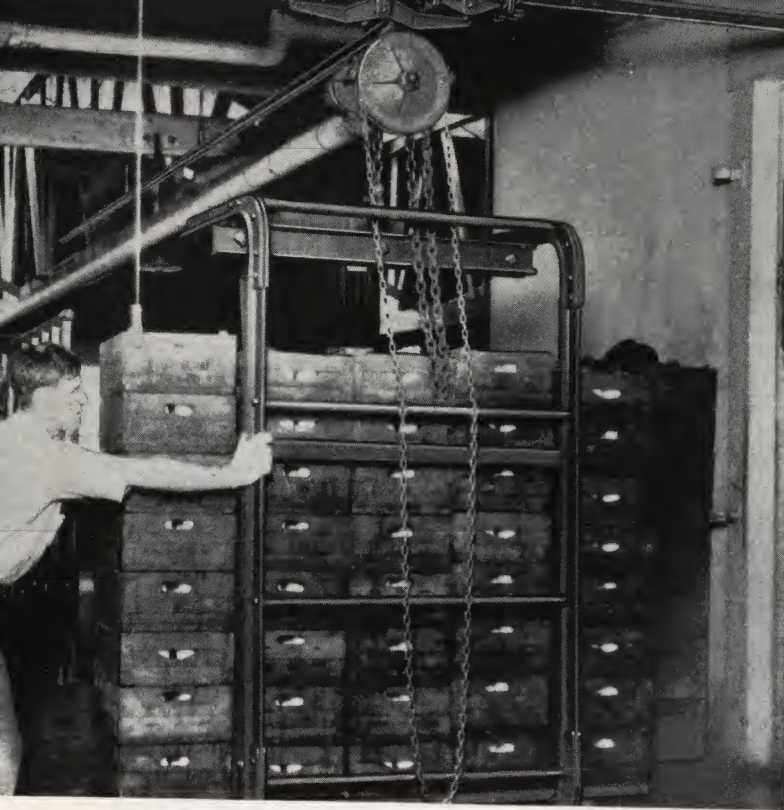


Sludge removed from process with MonoTractor hoist and bucket. Operators claim handling costs were reduced 75%.

[ 15

# AMERICAN MONORAIL



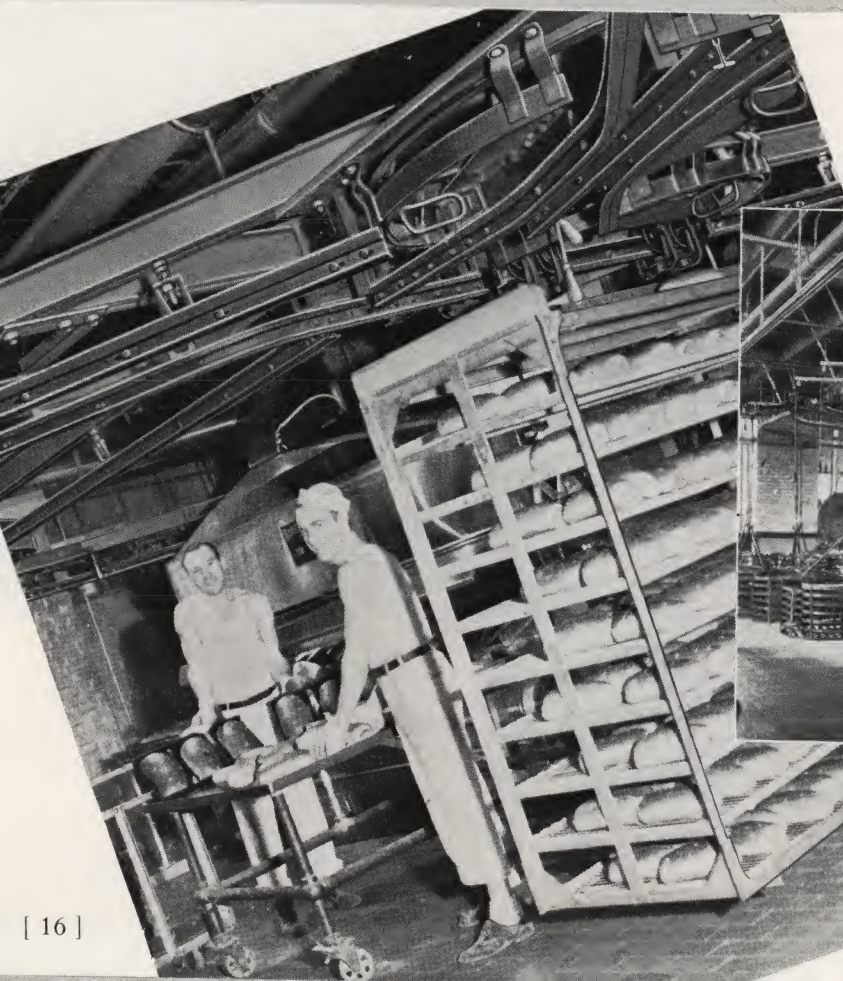


Special skid carrier on chain hoist moves stacked milk cases to refrigerator.



Rigid arm push button station moves and controls loads between processes.

# AMERICAN MONORAIL

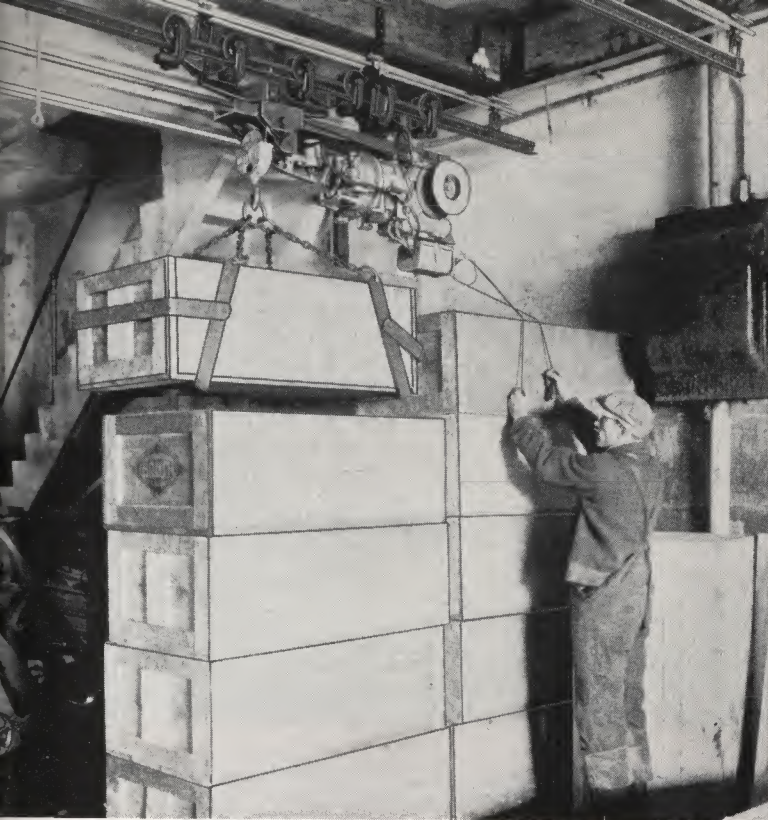


Compact arrangement of turntables allows switching of bread racks to track radiating in many directions for easy handling.



Storage tracks where baskets of processed canned foods are cooled before labeling and packing.





Special low headroom hoist arrangement permits high piling of boxes.



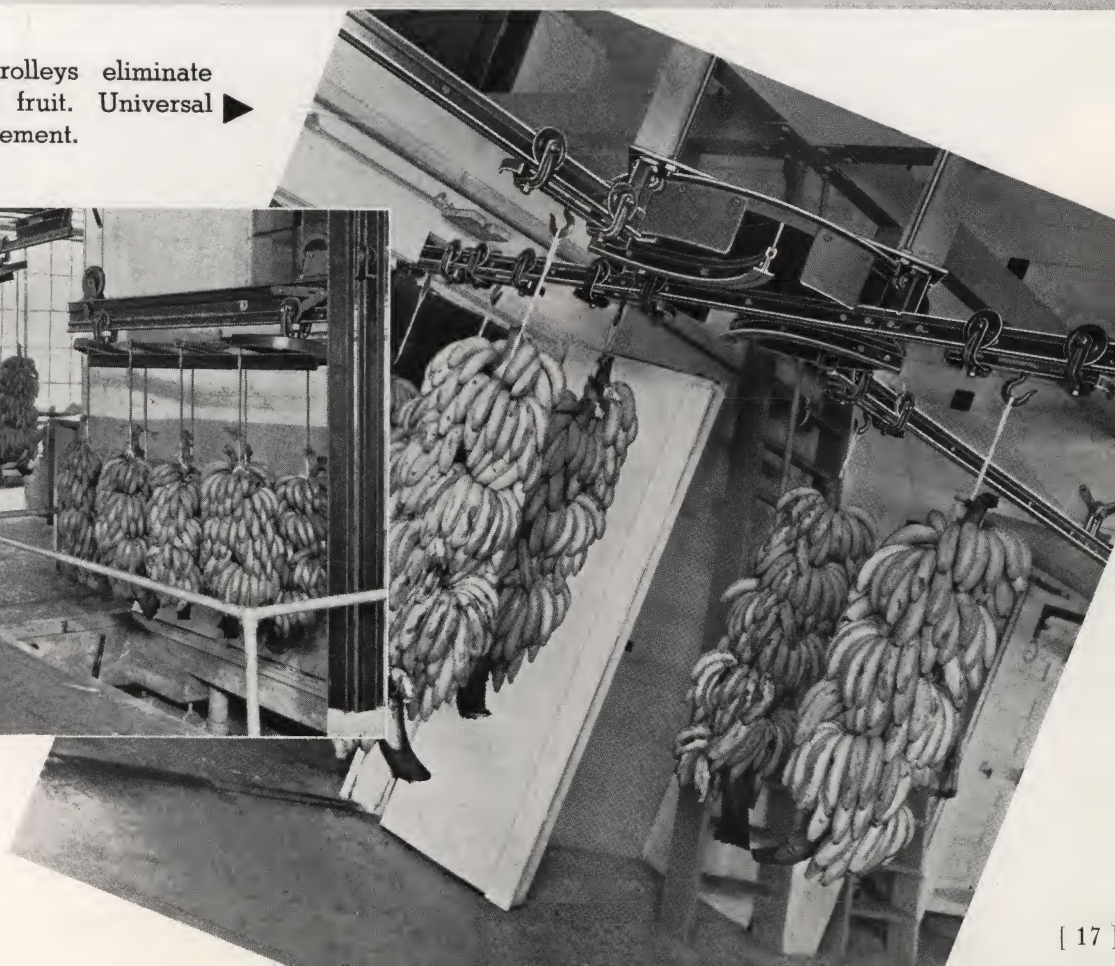
Troughs stored on spur tracks from switches on system in conditioning room.

# IN FOOD INDUSTRIES

Bumpers on special trolleys eliminate damage while handling fruit. Universal switch allows 3-way movement. ▶



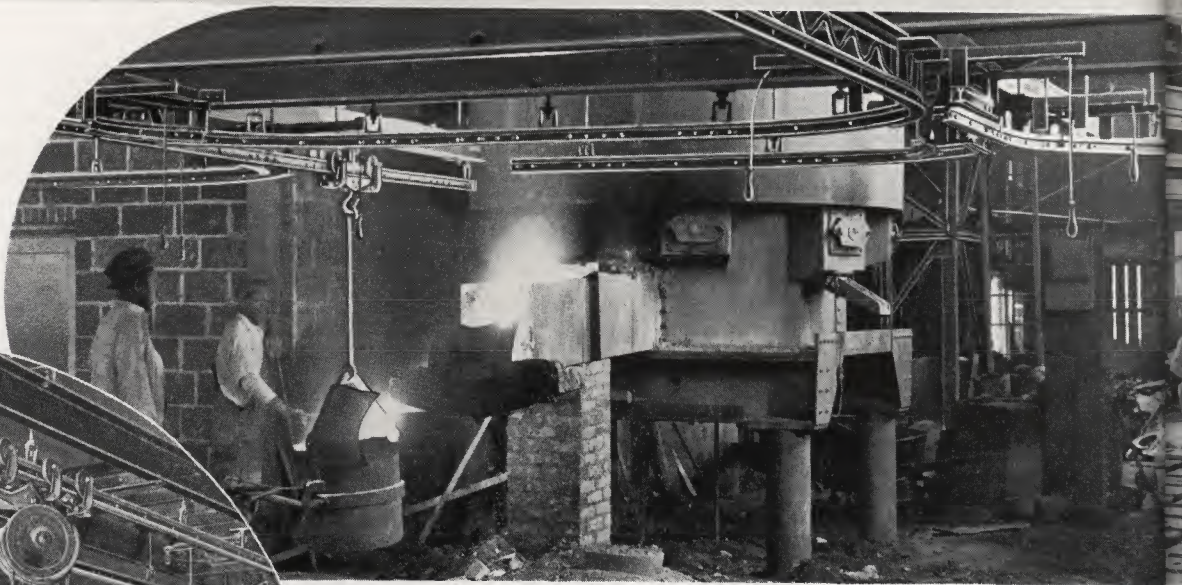
Special trolley racks move fruit from cars to ripening rooms via automatic lift to lower level.



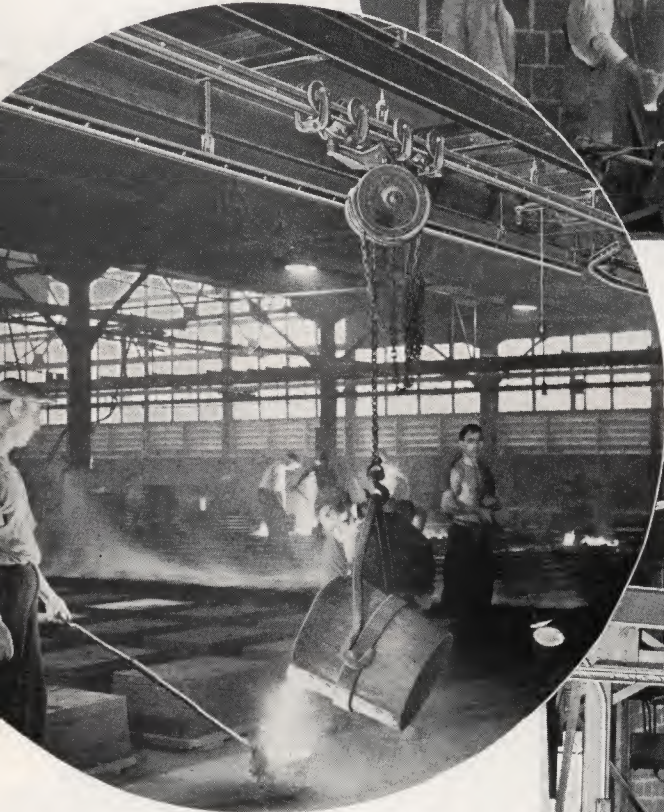


# AMERICAN MONORAIL

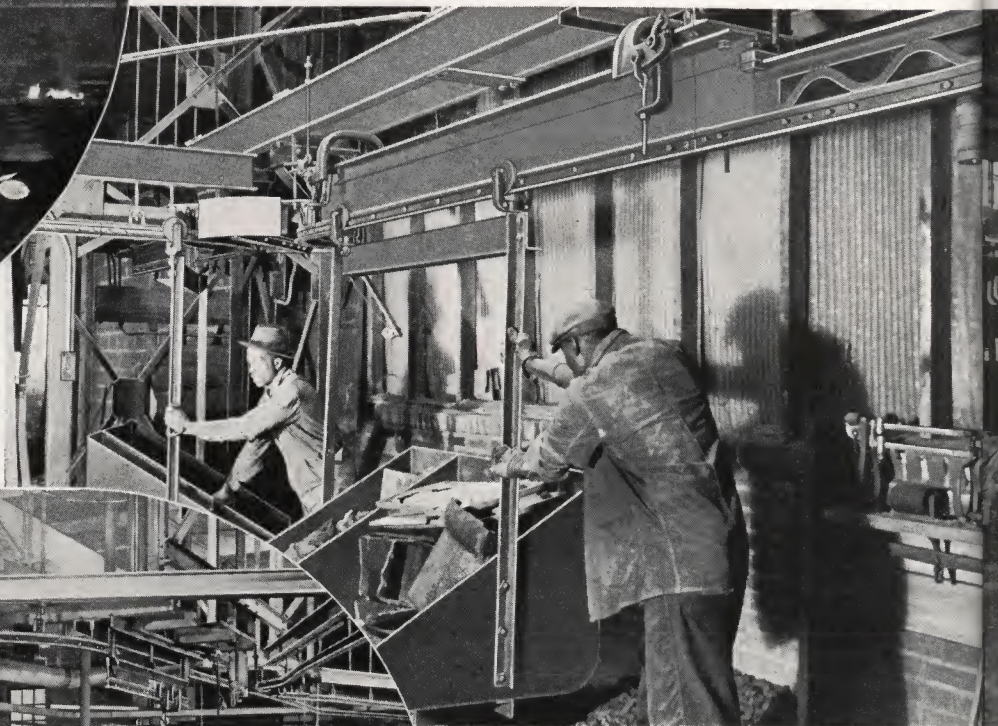
Metal is distributed over the pouring floor quickly and safely on a simple MonoRail System with hand chain hoist carrying ladle.



One of a variety of track arrangements at the cupola. Two spur tracks furnish access from separate lines to speed up pouring of metal.



Lift section picks up loads from roller conveyors for passage to cleaners.



Special carriers move charge materials over scale section and lift for transfer to charging floor on upper level.



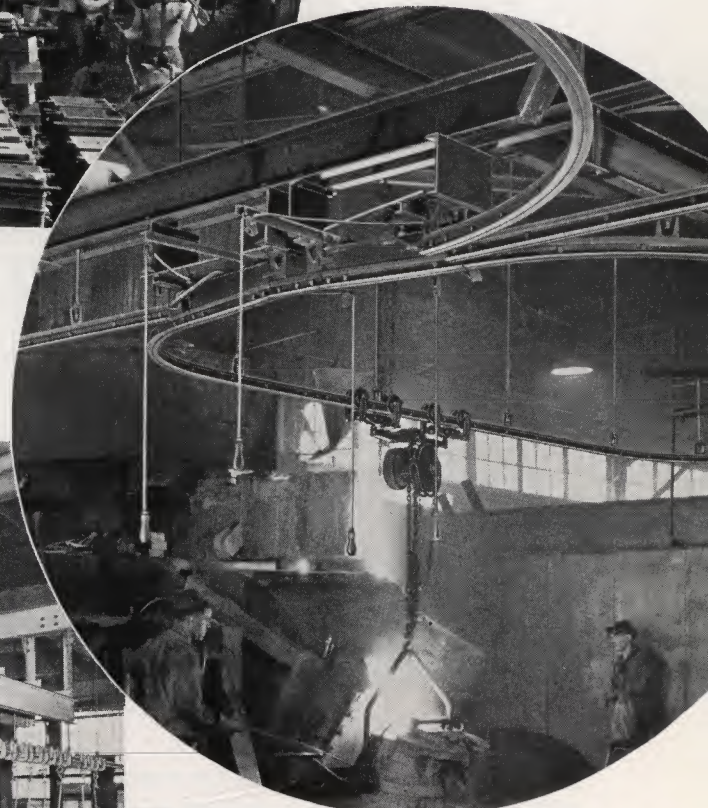


# I N T H E F O U N D R Y

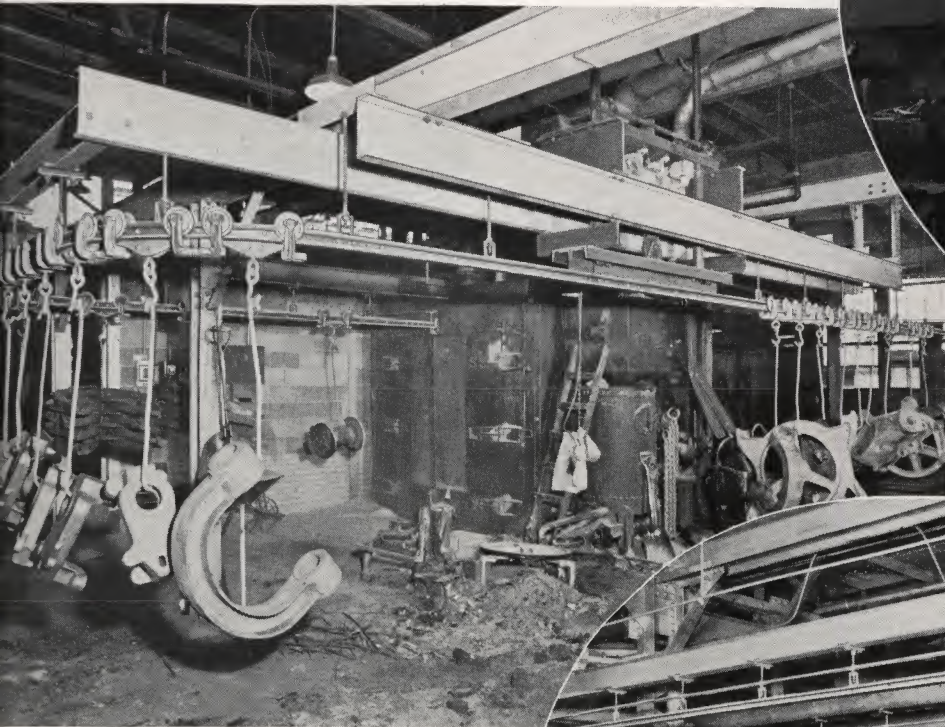


Inexpensive hand operated cranes serve entire pouring floor area. Ladles are loaded from bull at runway track in center of floor.

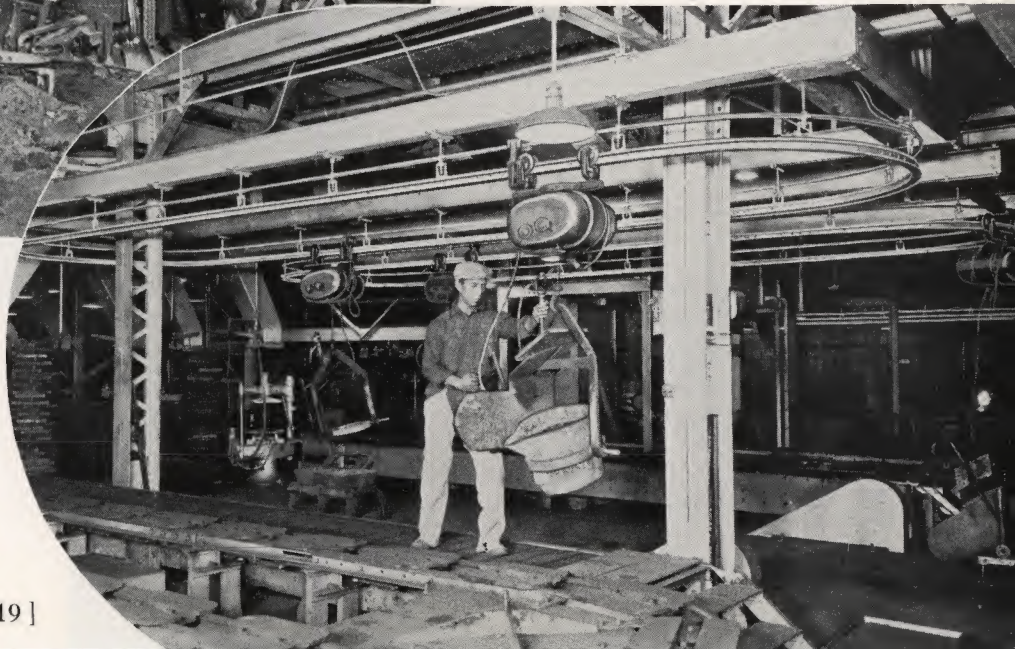
Switch arrangement assures quick and safe distribution of metal in all directions from cupola to pouring floor.



Continuous pouring loop with hoist following on MonoRail track.



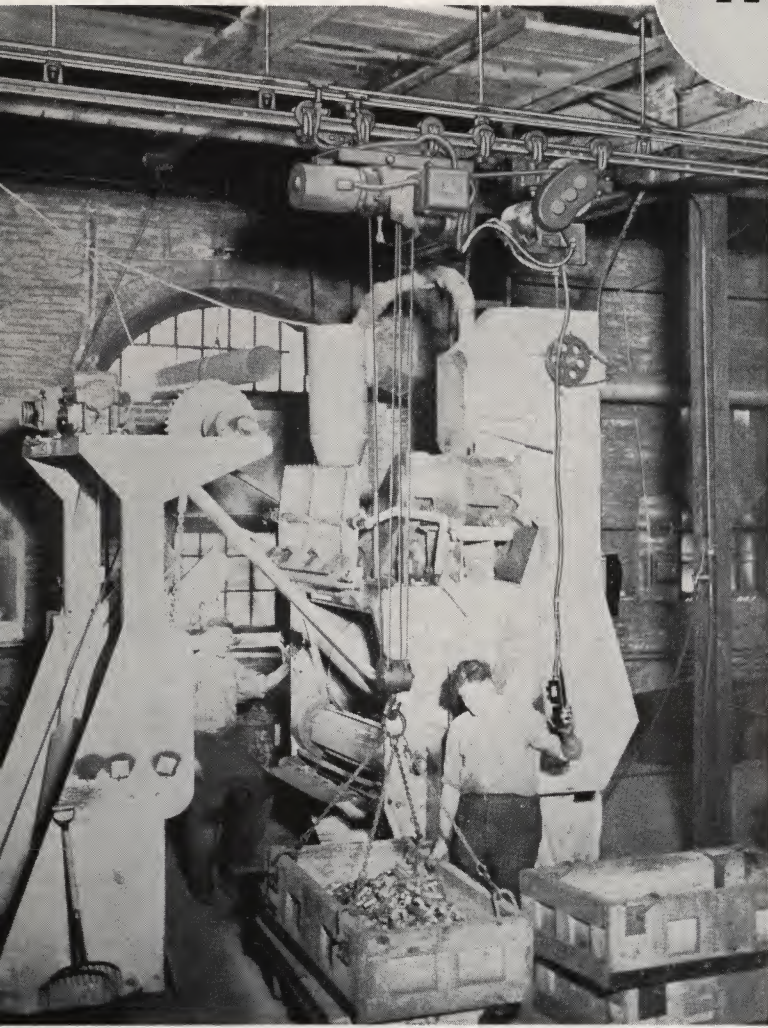
Electric hoist lift section loads and discharges heavy castings on trolleys for passage through sand blast cleaning.



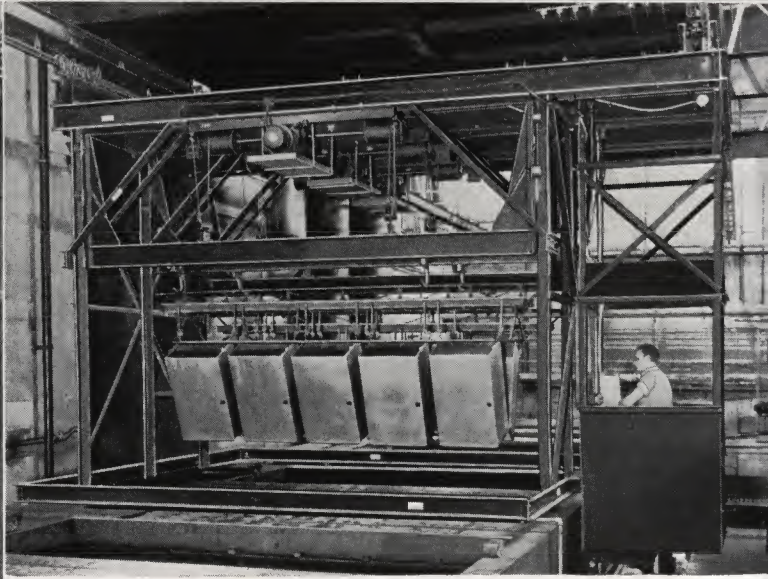


MonoTractor and electric hoist handle heavy loads from unusual height with fingertip control for all movement.

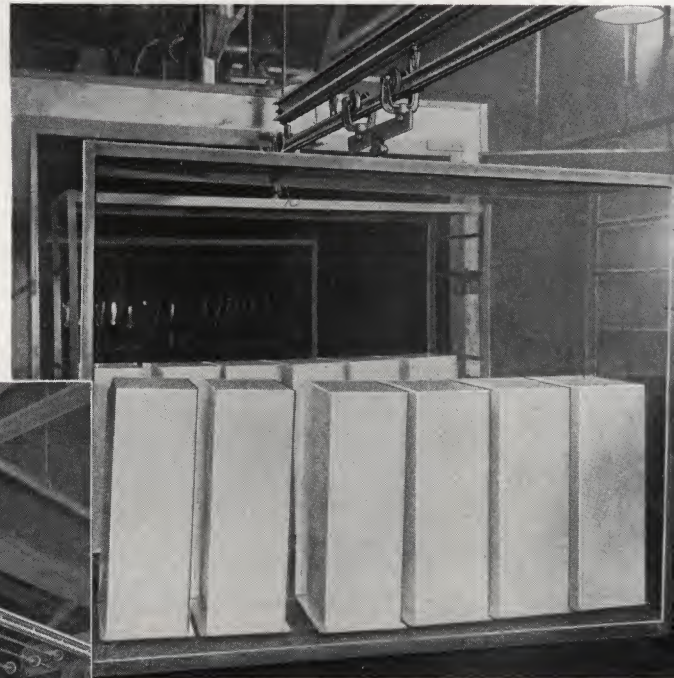
# HEAT AND CLEAN



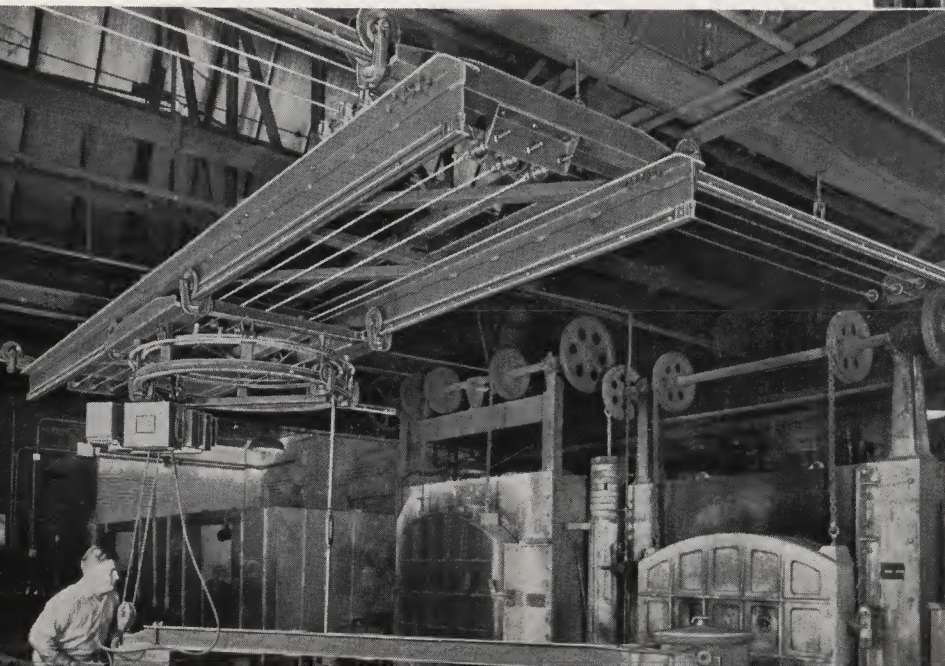
Flexible movement in all planes enables operator to remove annealing pots to quench in shortest possible time. Crane serves furnaces at right angle to quench.



Special power operated dipping crane moves 15 cabinets quickly through cleaning processes without reloading.



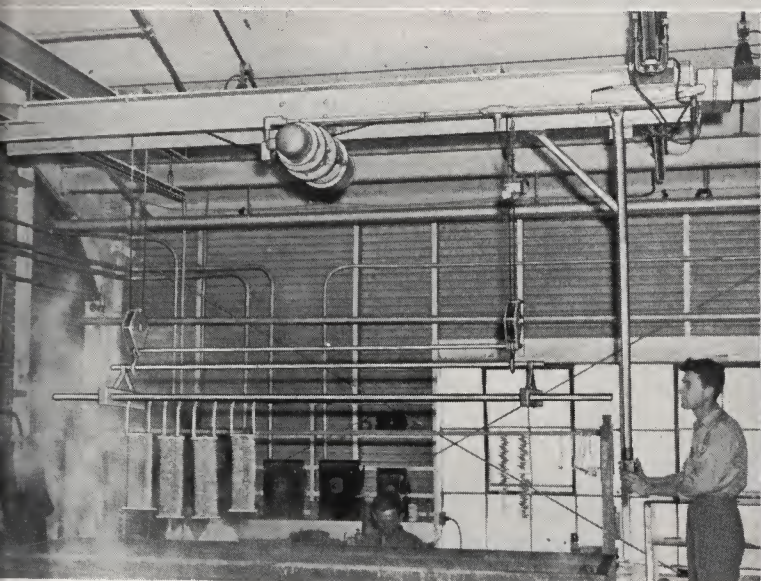
Large racks with easy rolling trolleys push easily through dryers. Racks swivel for passage through narrow aisles.



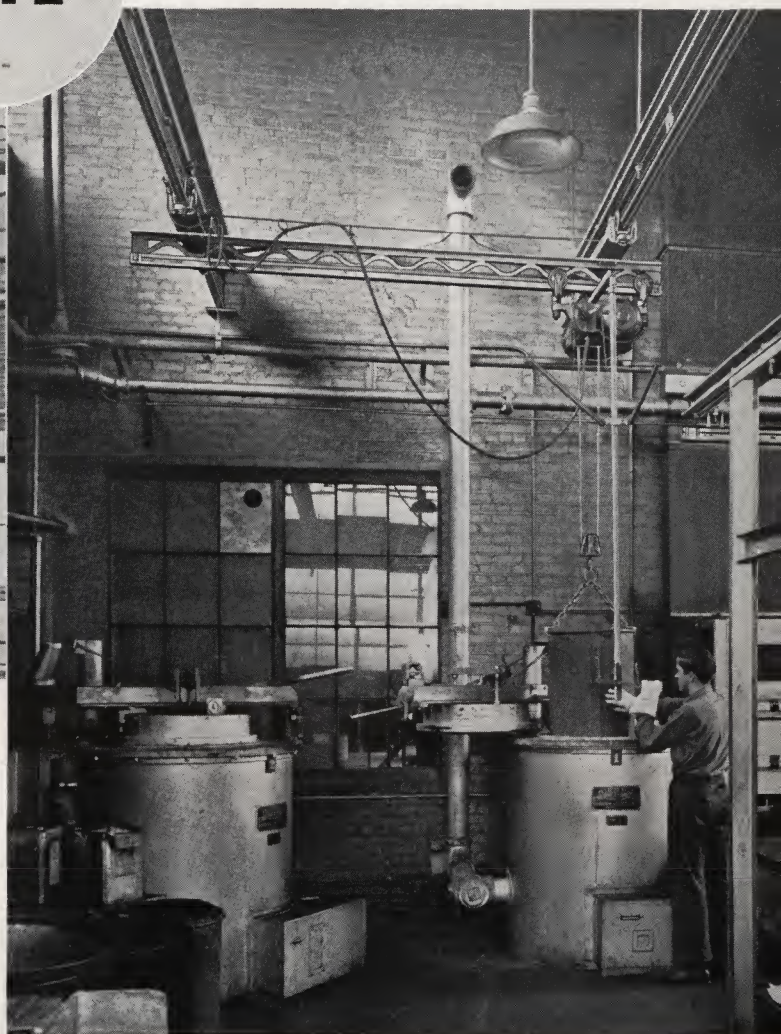


# WITH MONORAIL

Inexpensive light duty crane serves battery of heat treating furnaces. Note tag line electrification and stiff-arm control.



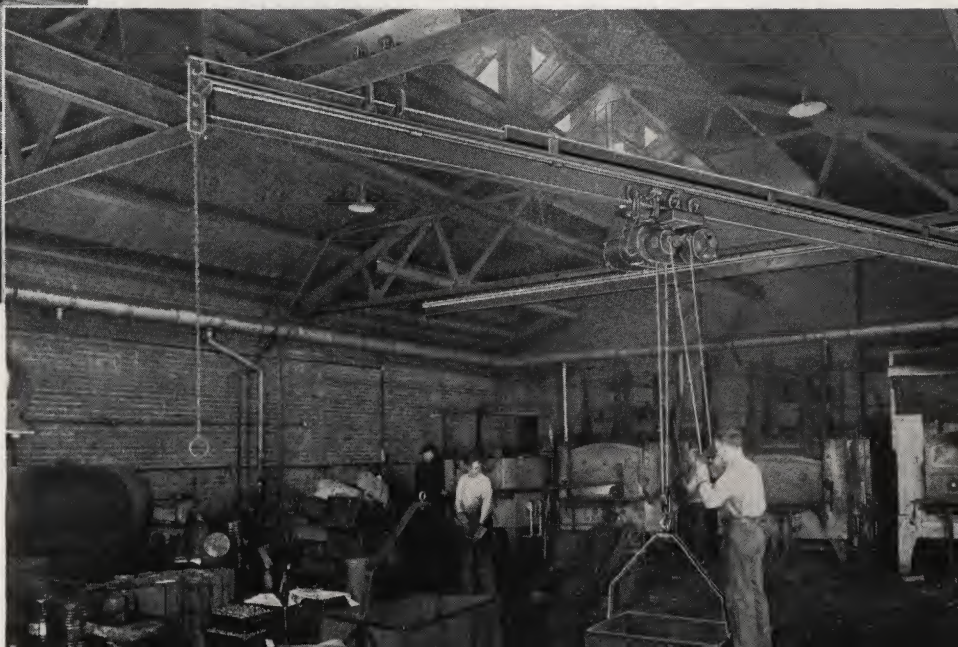
Small parts mounted on special frames are handled through baths on special twin hook rigid arm crane arrangement.



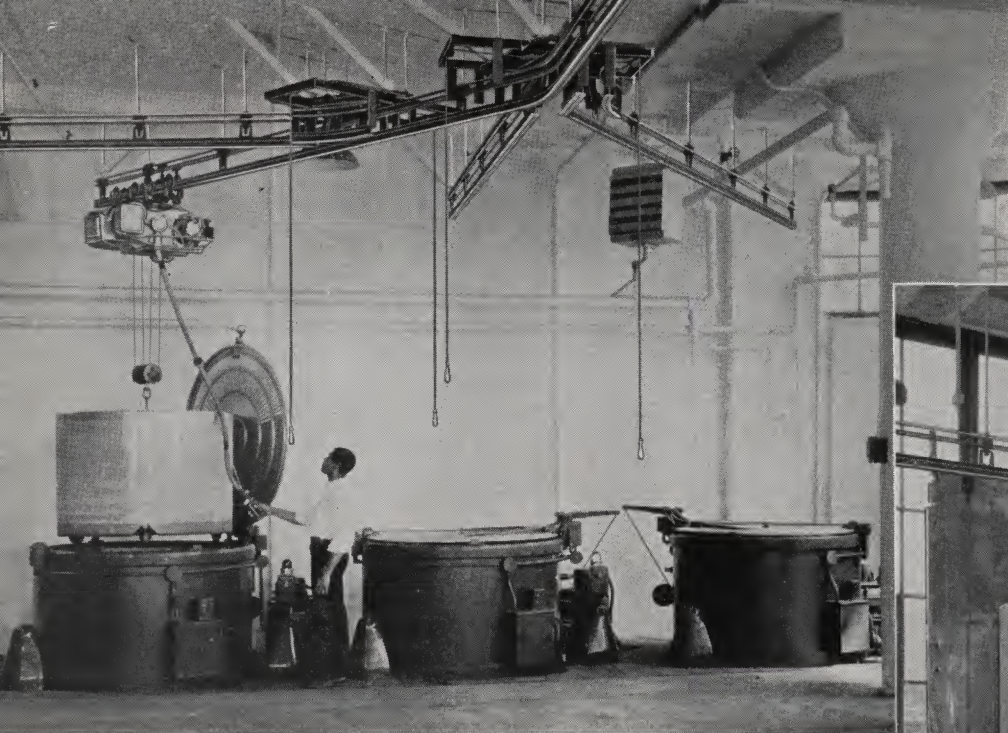
Swivelling on one end, telescoping on the other, this crane serves four furnaces with electrified bridge for handling parts direct to central quench pit.



Simple track loop with hand chain hoist proves an effective system for movement of parts in heat treating department.

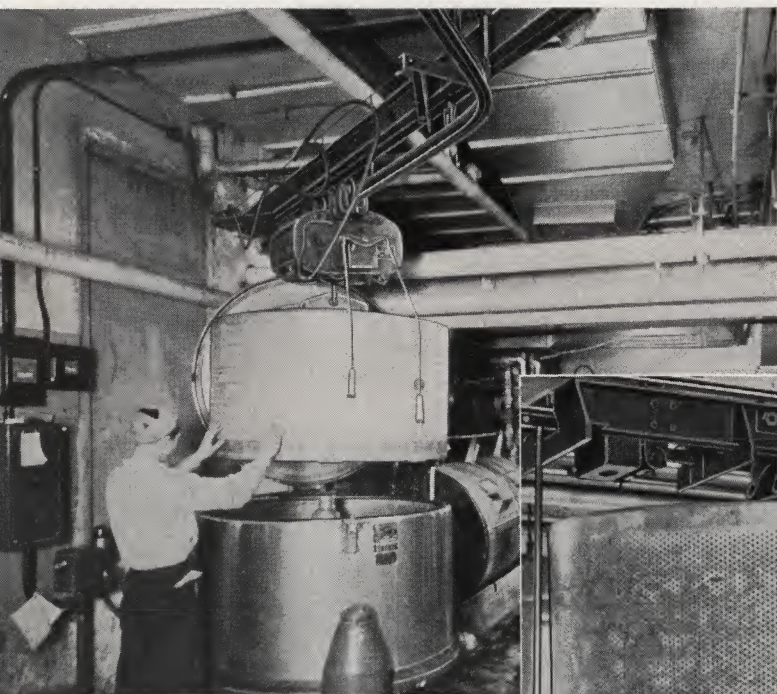
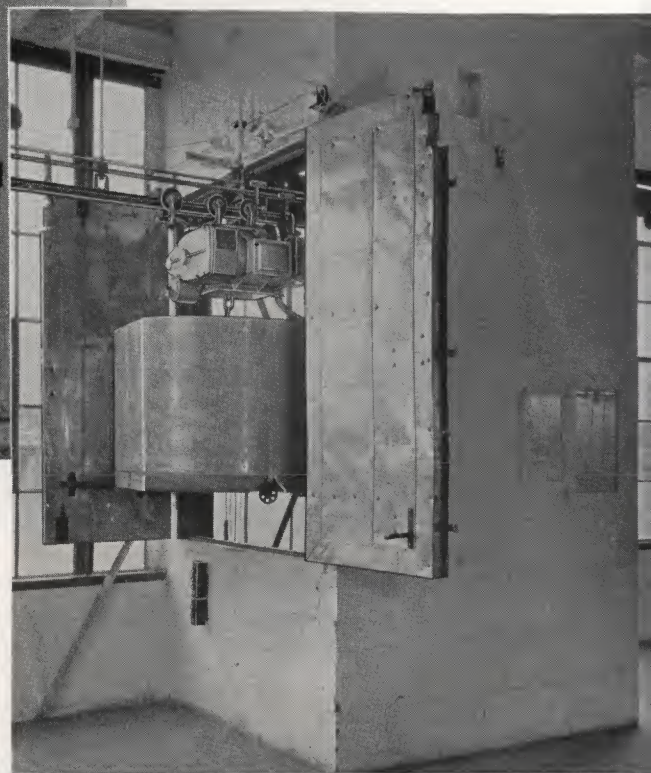






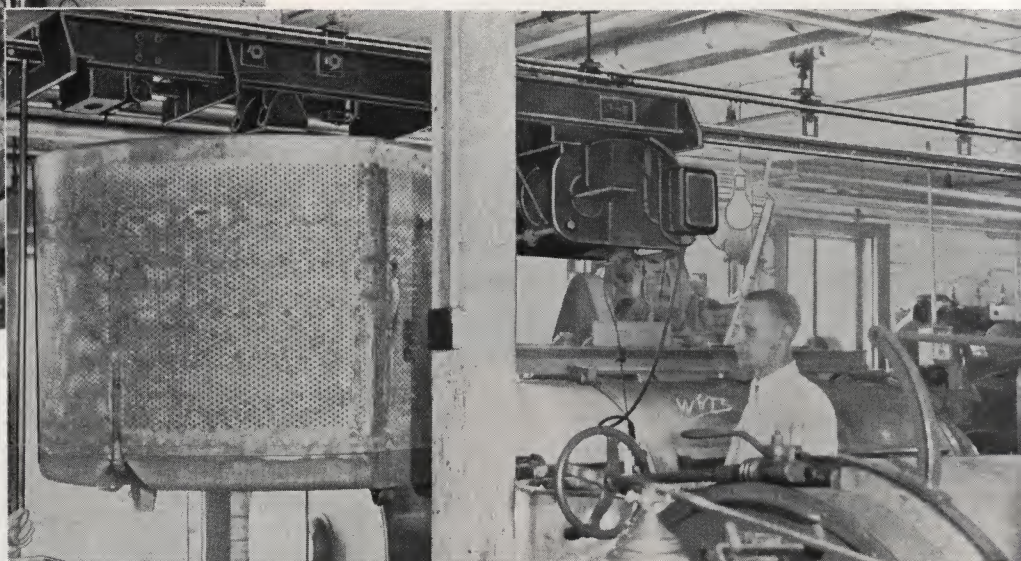
Ideal track layout for group of extractors. Spur track over each machine eliminates passage of dripping container over extractor in operation.

Enclosed fire proof lift section for transfer of container and hoist to system on upper level.



Short track section with tag line electrification proves ideal system for small laundry with one extractor.

Special low headroom hoist hook-up brings top of extractor to basket to 4" from bottom of track to meet unusual ceiling conditions.





Low headroom system showing minimum height for unloading containers with hinged bottom of extractor dropped in truck.



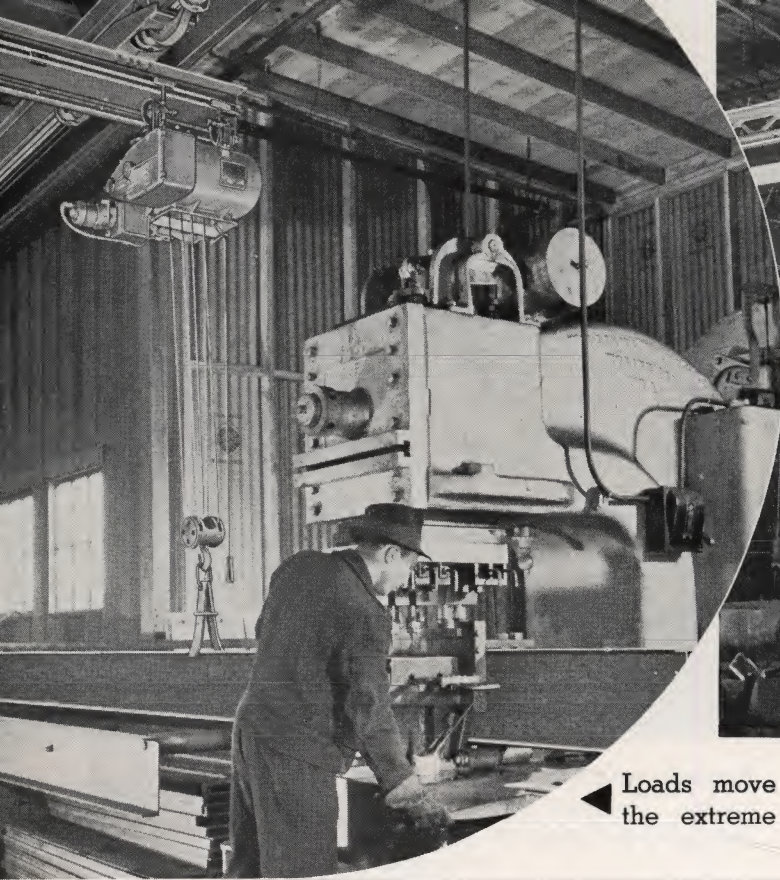
Properly engineered layout with track over each extractor. Compact system allows access to washers and shake-out at ironer.

Finishing Room extension of system in washroom of large laundry with ideal conditions of space and height.

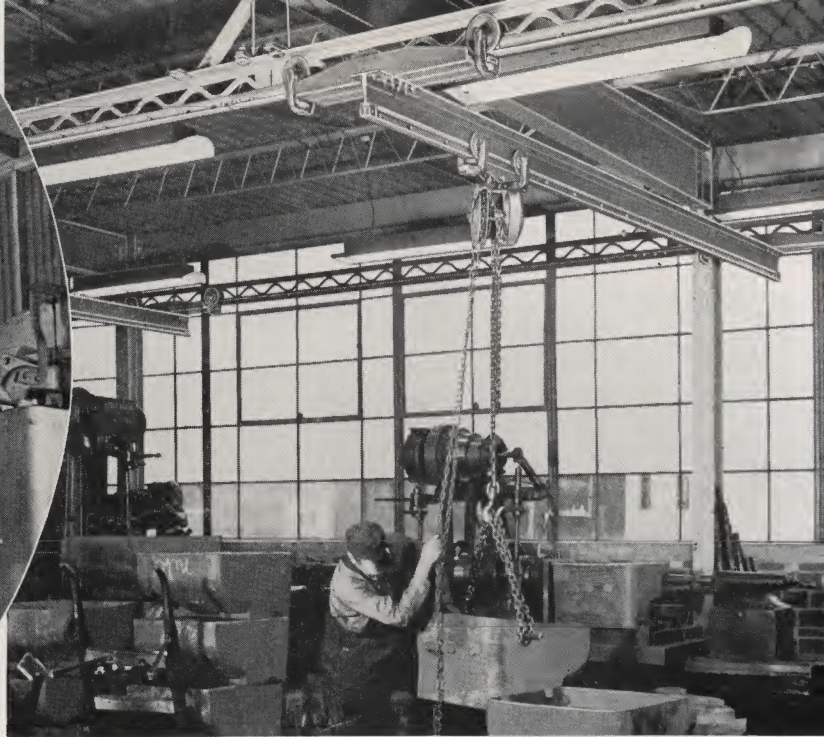


Moisture proof all-steel hoist built for heavy duty laundry service has high speed lift.





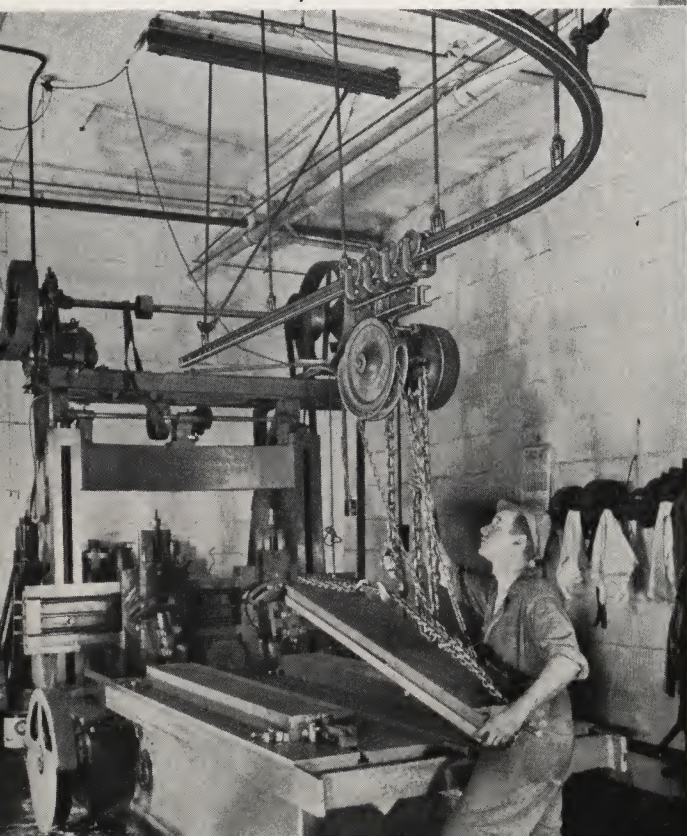
◀ Loads move easily even on the extreme end of crane.



Hand crane furnishes ideal handling for small shops.

# AMERICAN MONORAIL

Spur track over table planer aids in spotting heavy die blocks safely and accurately with no damage to machine.



RailMaster cranes with interlocking crossovers serve each bay in this tire mold shop. Note close headroom hookup of 3-ton hand chain hoists.





Cranes and chain hoists cover entire area for die handling.



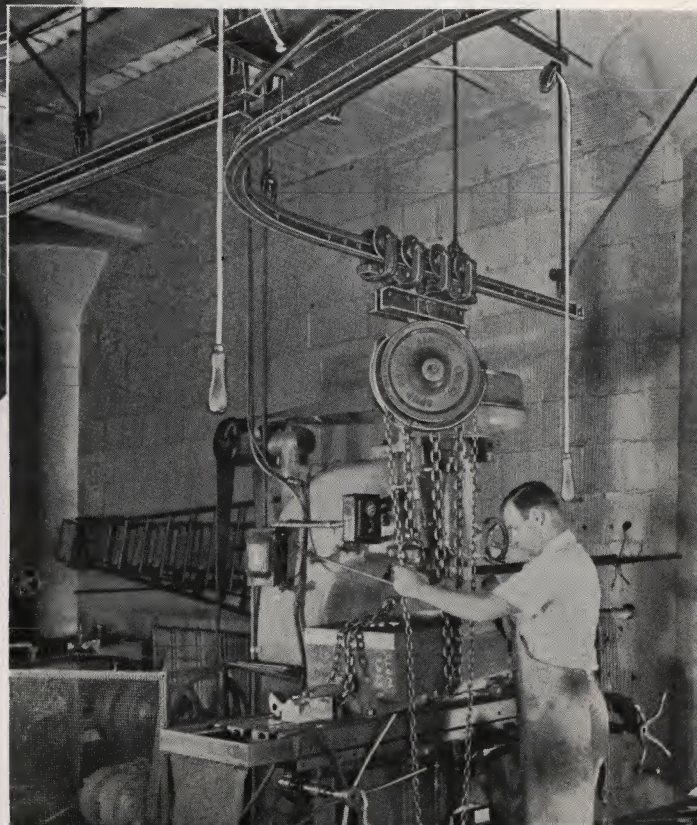
Cranes help handle die blocks easily with little lost time. ▶

# IN MACHINE SHOPS

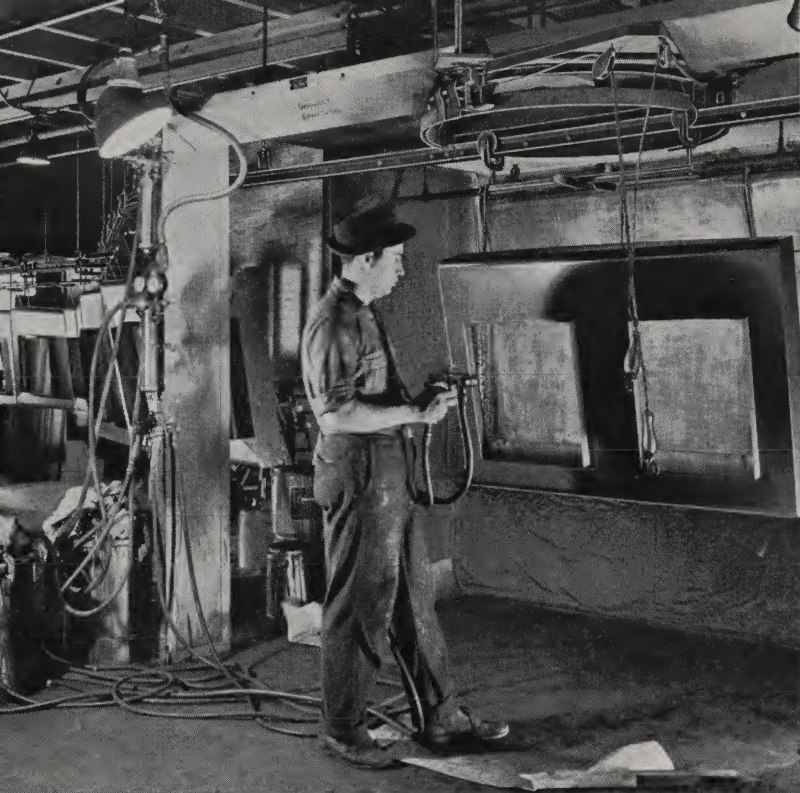


Power operated crane serves battery of automatics in large auto parts plant. MonoTractors propel both crane and hoist units.

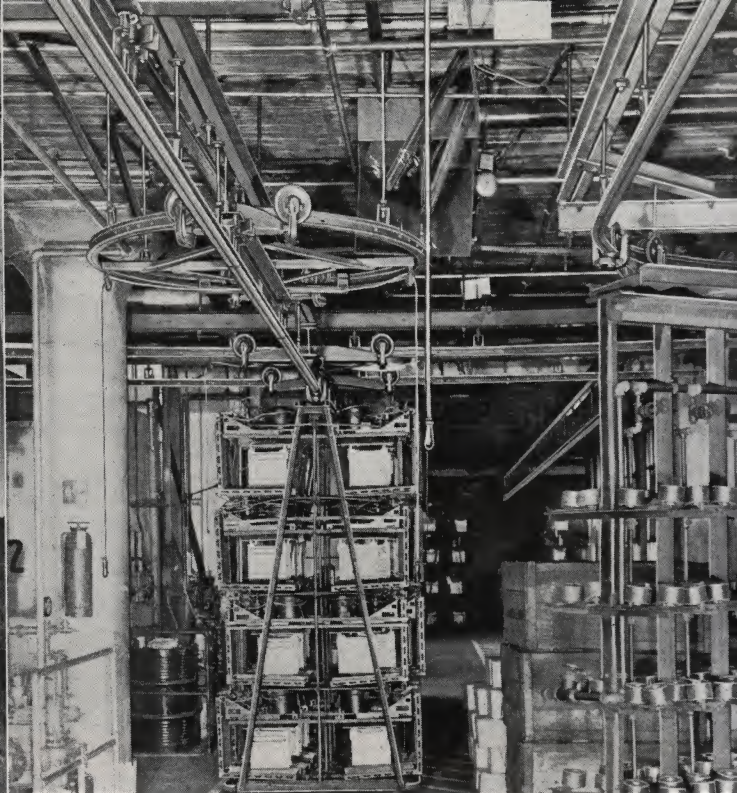
Spur track with hand chain hoist over machine brings work into position for accurate and careful setting of die block saving operator's time. ▼





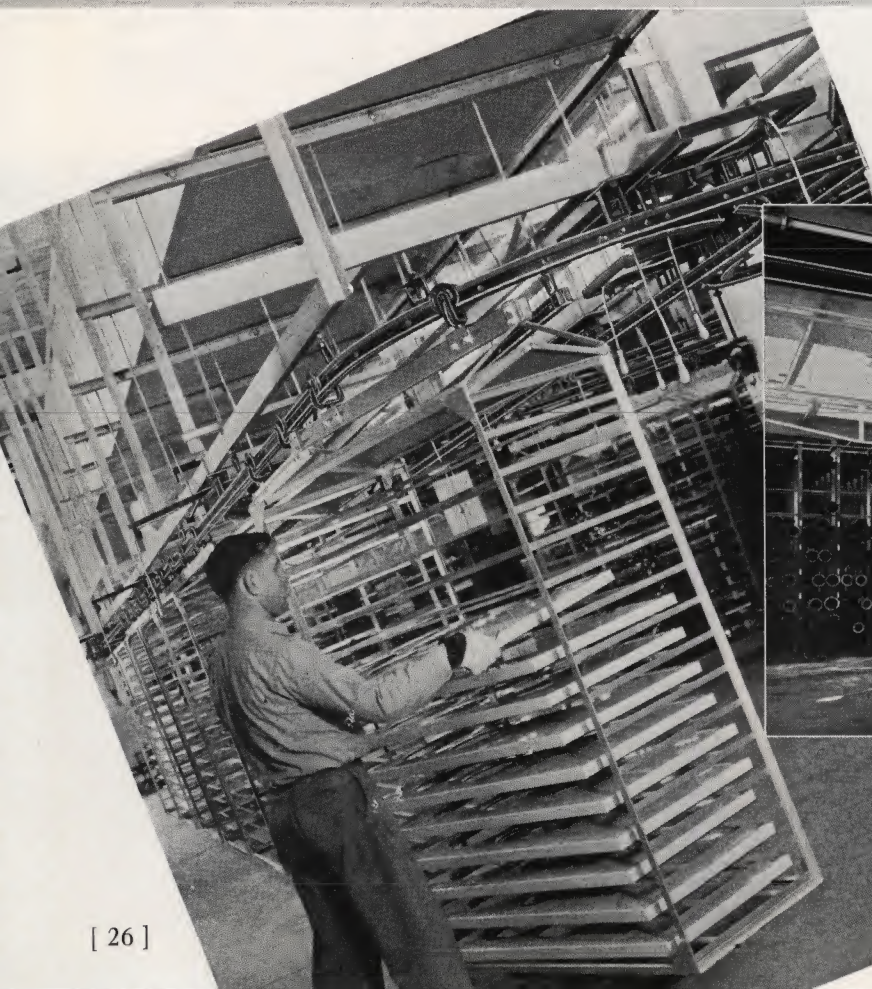


MonoRail brings metal parts to spray booth. Turntable allows access to both sides.

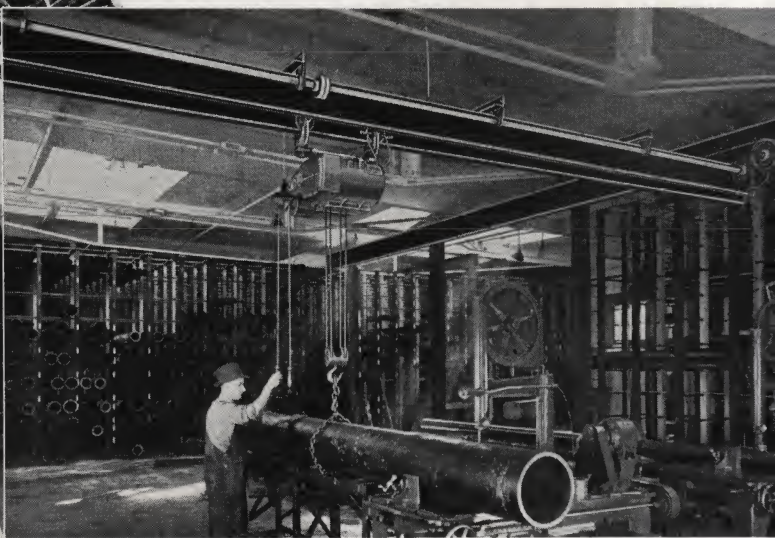


Special racks move and swivel on short cranes to storage or process.

# METAL WORKING WITH

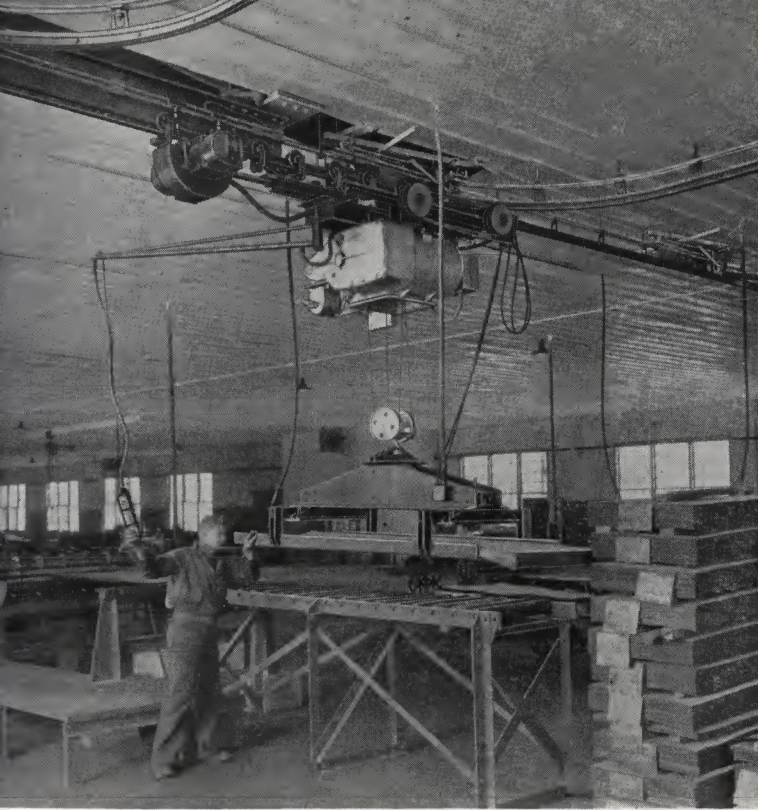


Simple system provides for process and storage of parts. Racks cut down damage and eliminate rehandling through process.

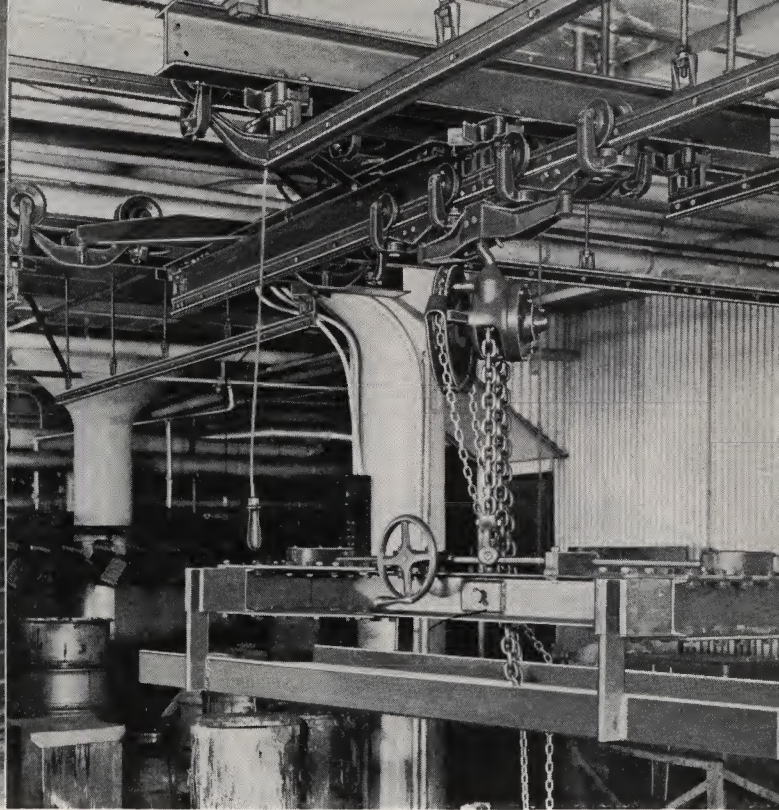


Hand-racked crane with electric hoist serves pipe storage and entire operating area of warehouse.





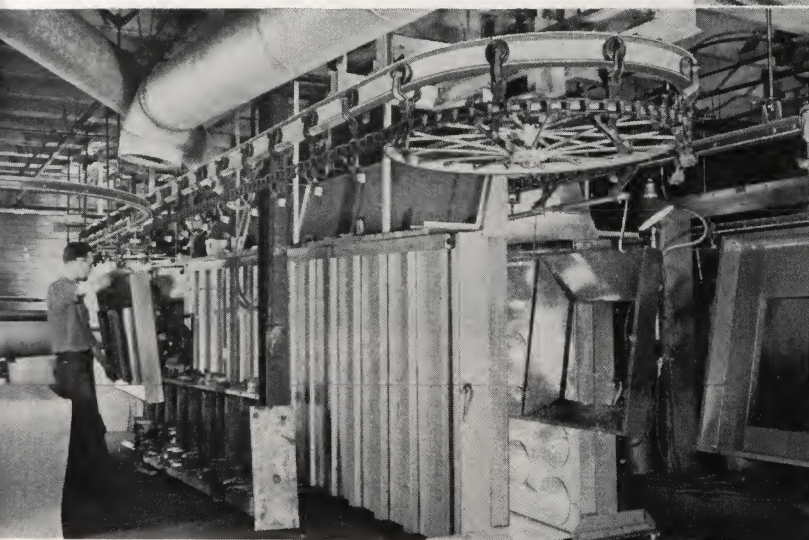
Motor operated grab, hoist and Mono-Tractor keep down cost of handling sheets.



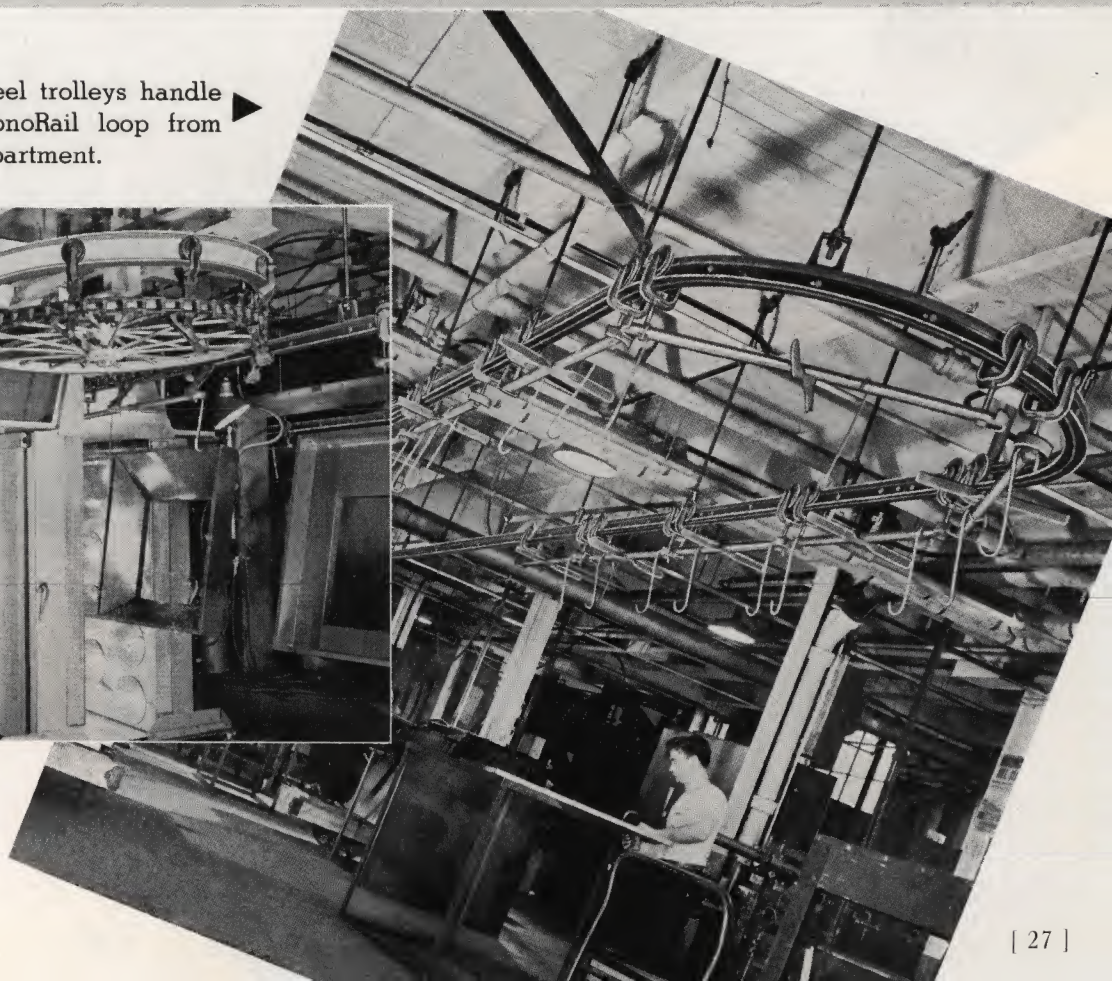
Hand operated sheet grab with chain hoist on short crane with interlocking spurs.

# AMERICAN MONORAIL

Hook carriers on two wheel trolleys handle sheet metal parts on MonoRail loop from fabrication to finishing department. ►



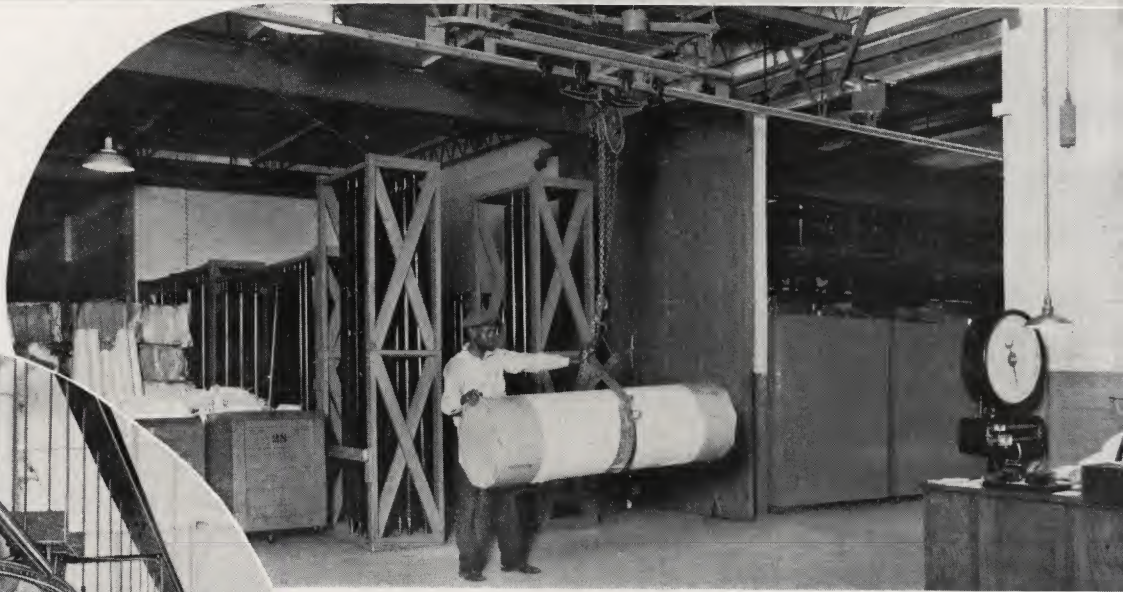
Pusher system feeds sprayed parts through infra red dryer on Mono-Rail track with discharge to wrappers.



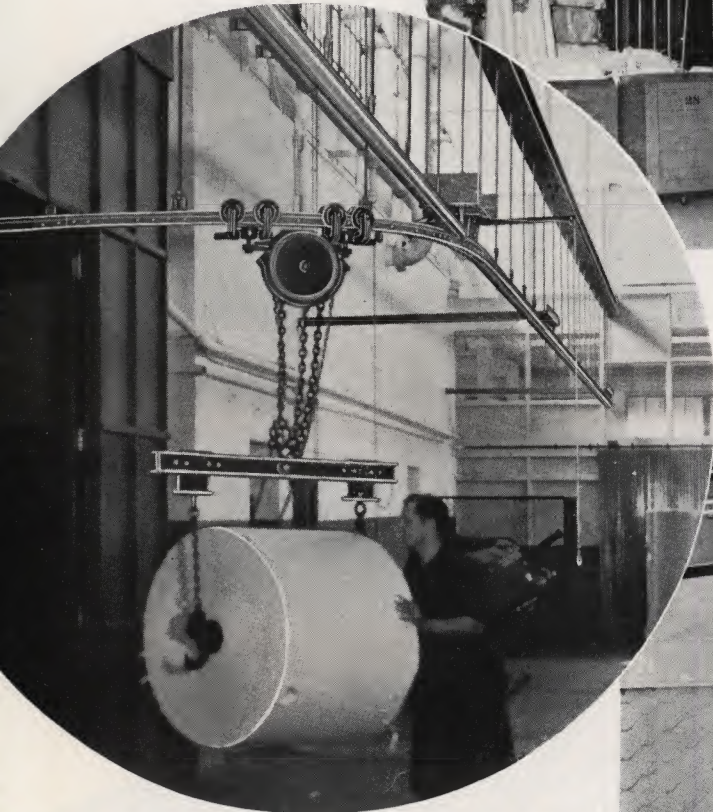


# AMERICAN MONORAIL

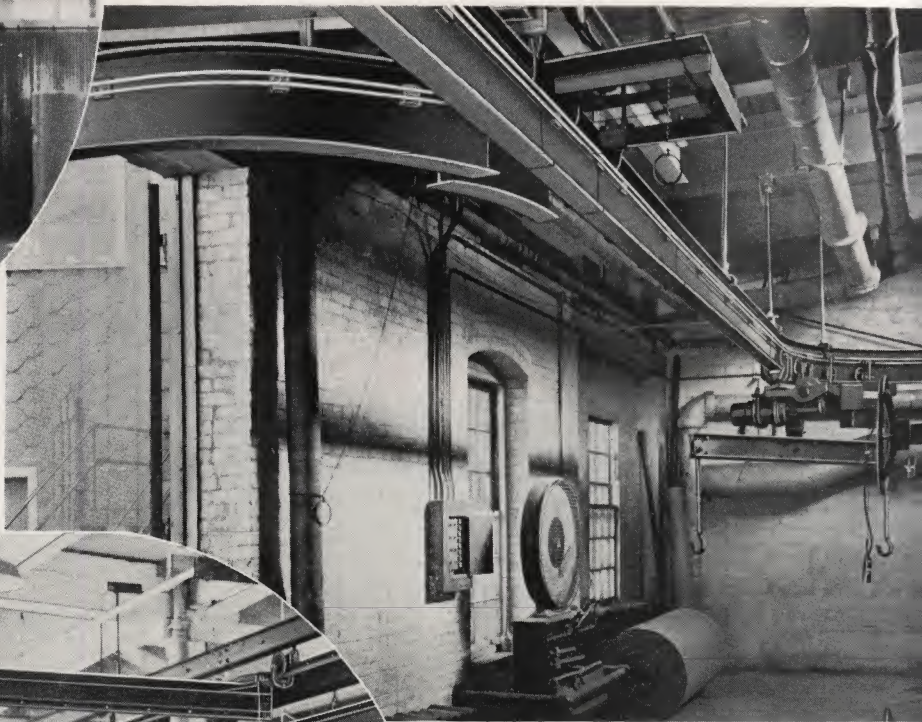
With no damage to stock, heavy rolls are delivered and mounted in presses with an inexpensive system.



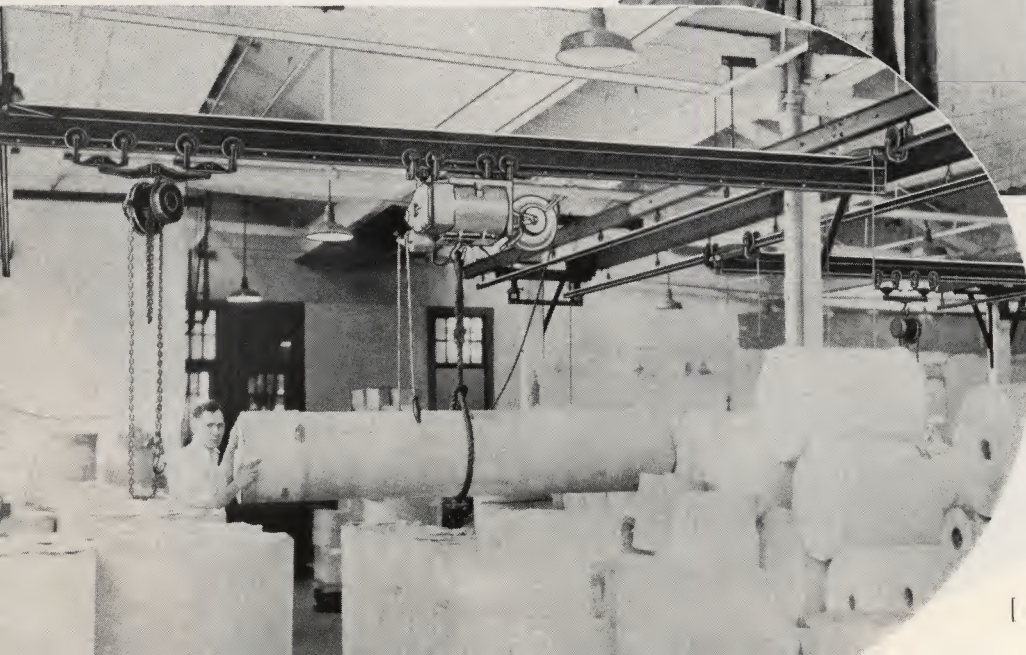
Stock controlled by weighing in passage over scale section. Special tong grab aids in handling of rolls.



MonoRail cranes furnish access to entire stock in warehouse.



RailMaster equipment with MonoTractor drive, moves heavy rolls from process to shipping dock. Special grab eliminates damage to stock.





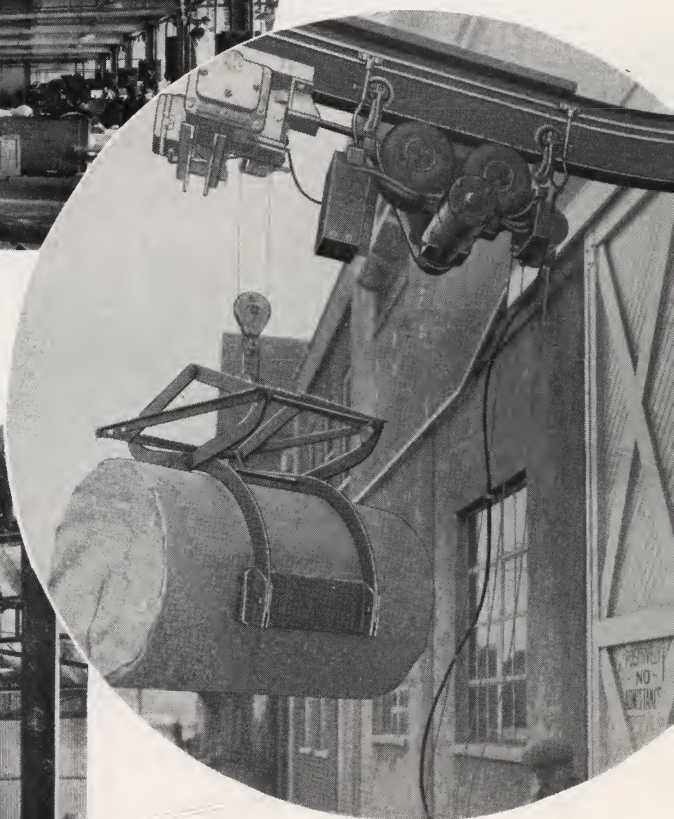
# H A N D L I N G P A P E R



Simple track system with chain hoist and tong type grab keeps presses rolling in this large printing plant.



High piling made possible with RailMaster power operated crane.



MonoTractor drive moves wide span crane with finger tip control at pushbutton station which also controls electric hoist on the bridge.



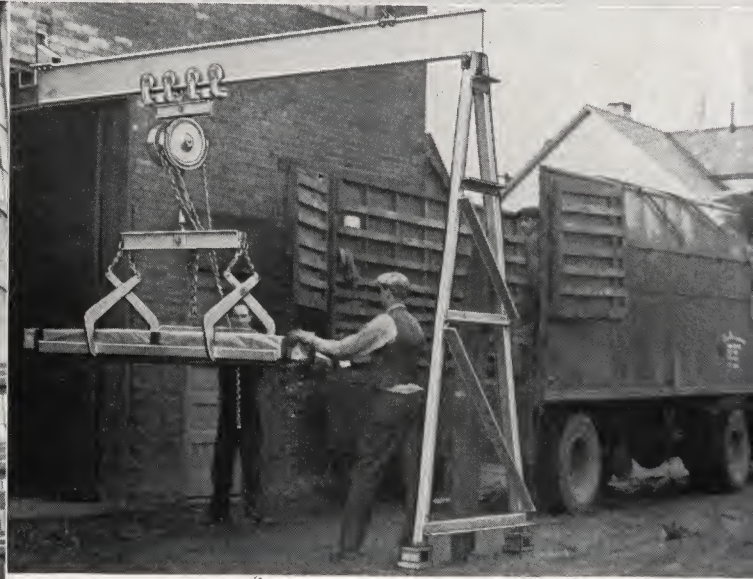


Spur track with chain hoist extending over doorway helps unload heavy die blocks to MonoRail system in shop.

# AMERICAN MONORAIL



Cab operated double bridge cranes serve entire warehouse and shipping dock of large steel wire plant.



Interlocking crane over driveway for unloading pallets of sheet steel into storage. Crane can be drawn up against building over doorway when not in use.



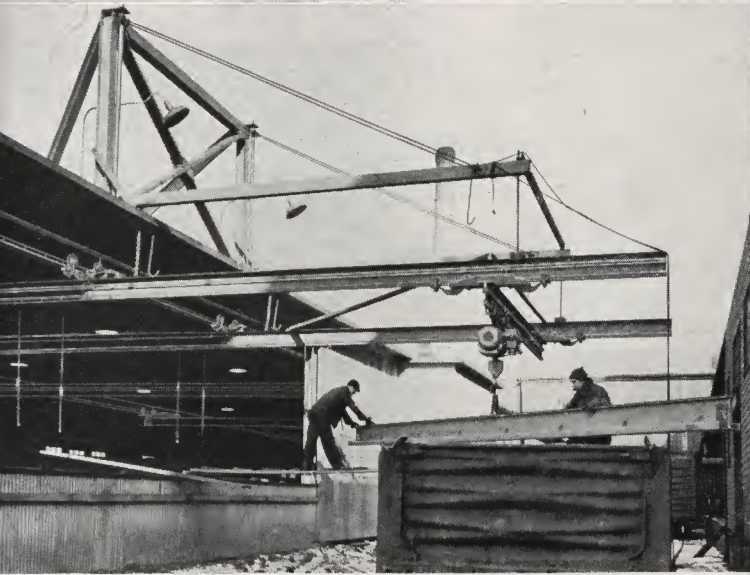
Hand operated sheet grab on interlocking and swinging crane unloads steel from truck to storage in  $\frac{1}{3}$ rd the time formerly required.



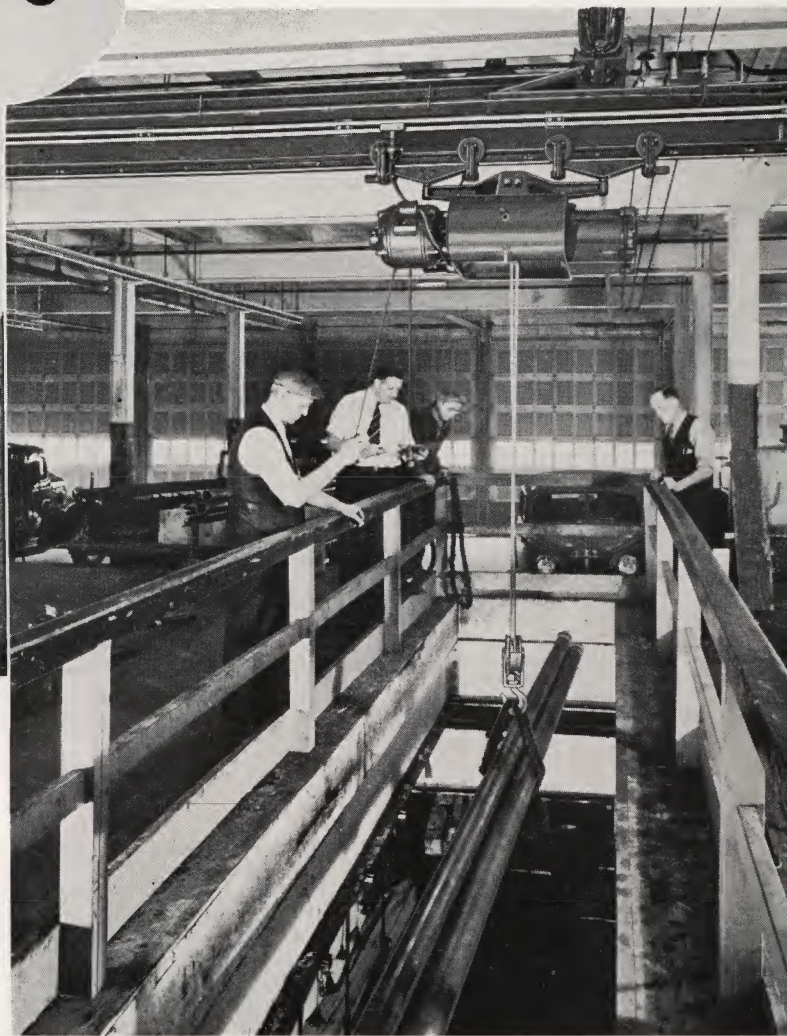


# IN SHIPPING

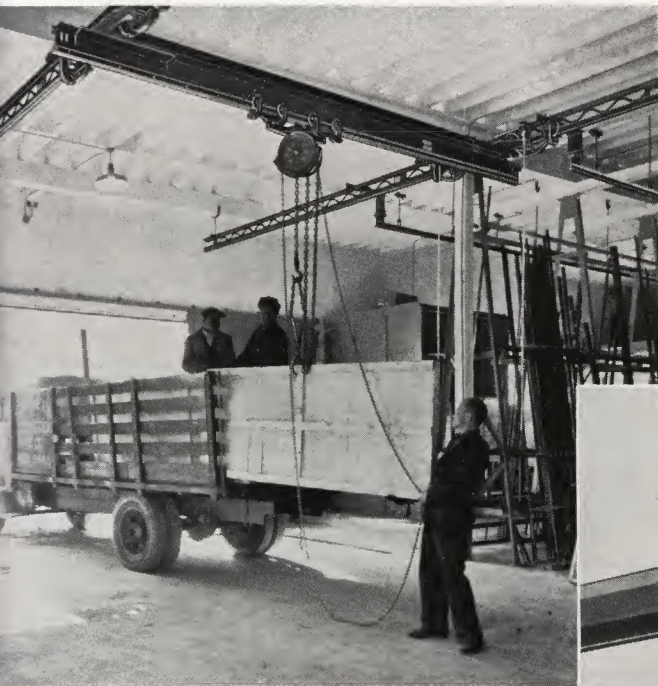
Handling pipe through special hatchway on electrified MonoRail crane over shipping dock of mill supply house.



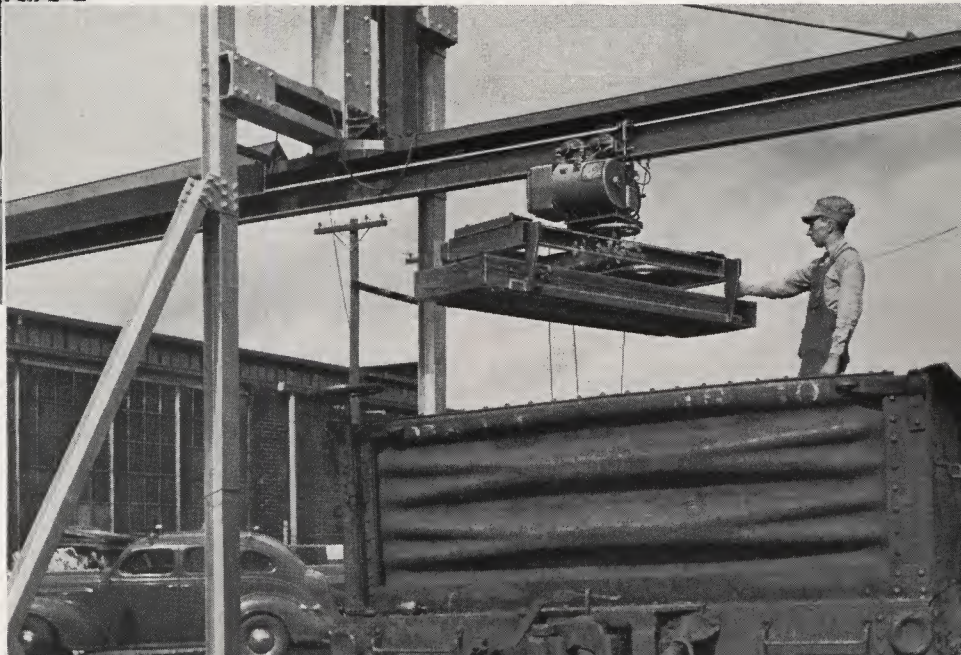
Three level systems with lower bridge run out on jib runways permits loading and unloading of cars to entire inside area without transfer from original pickup.



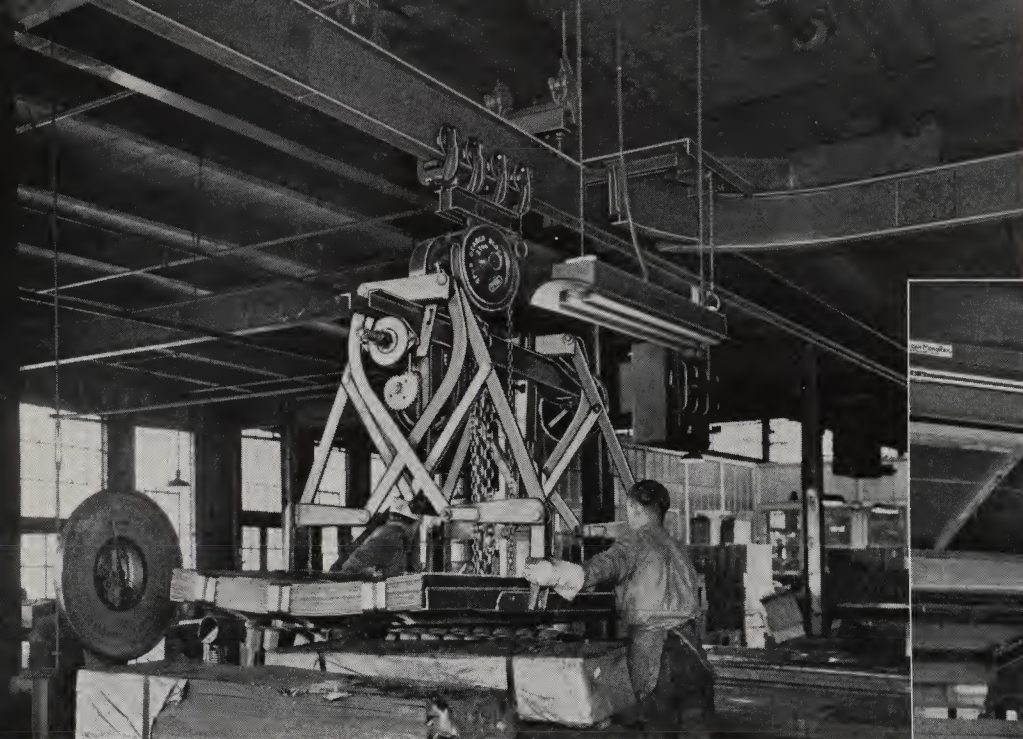
Interlocking jib unloads steel from gondolas without moving the car. Special low headroom grab easily handles 3-ton pallets of sheet steel.



Simple hand operated crane with chain hoist handles steel from trucks and throughout warehouse with spur tracks to storage racks.



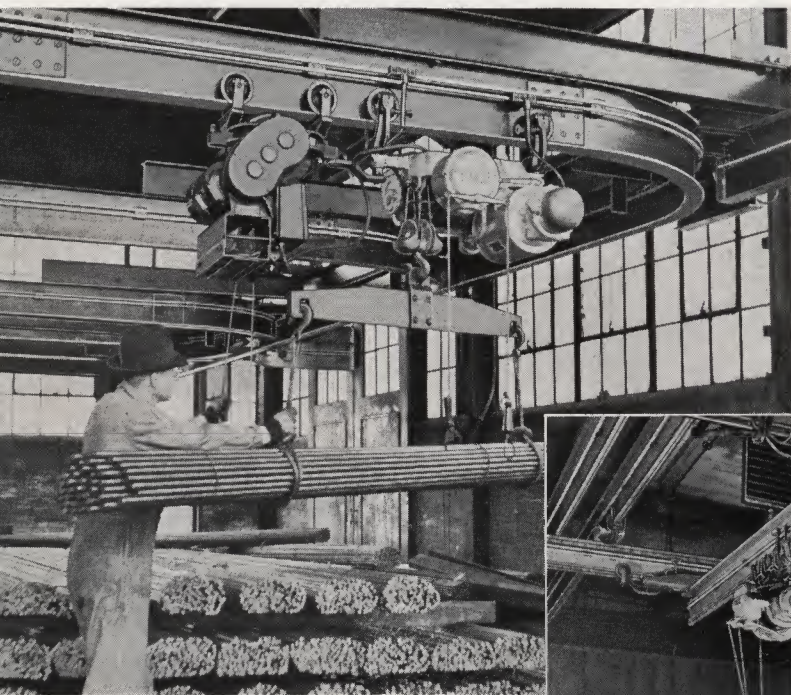




Special low headroom sheet grab with electric hoist on RailMaster Crane assures high piling in warehouse.



RailMaster system includes scale section where steel is weighed without transfer from special hand racking grab and chain hoist carrier.



Bar stock moves quickly with a MonoTractor and hoist unit on RailMaster Track System.

Criss-cross crane takes steel from gondolas to storage without transfer. Trolleys on three levels permit complete hook coverage with hand or electric hoists.

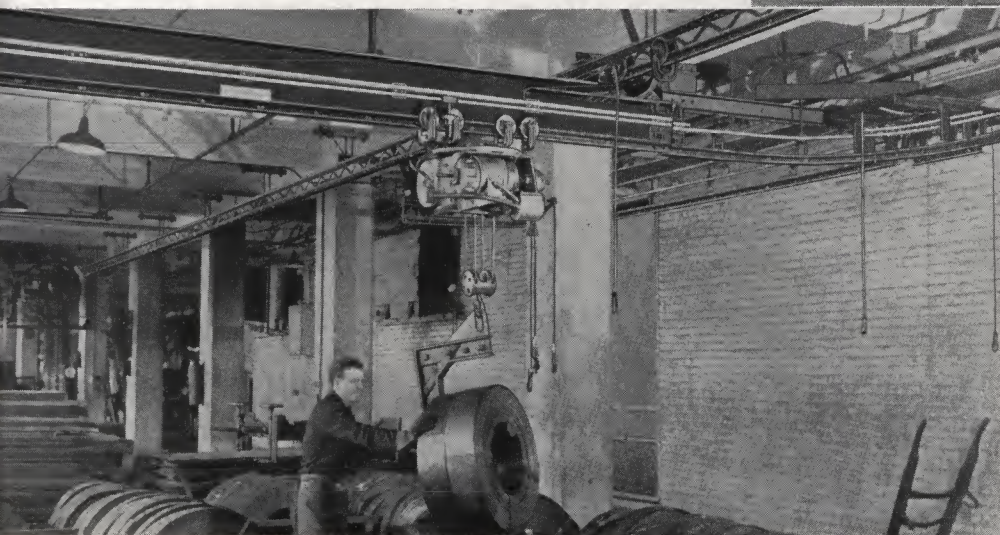




Spur tracks cover entire storage area with electric hoist. Sheets are piled neatly with low-cost sling grab.



Electrified, hand-pushed crane over storage has interlocking spurs to operating areas for quick transfer of stock.



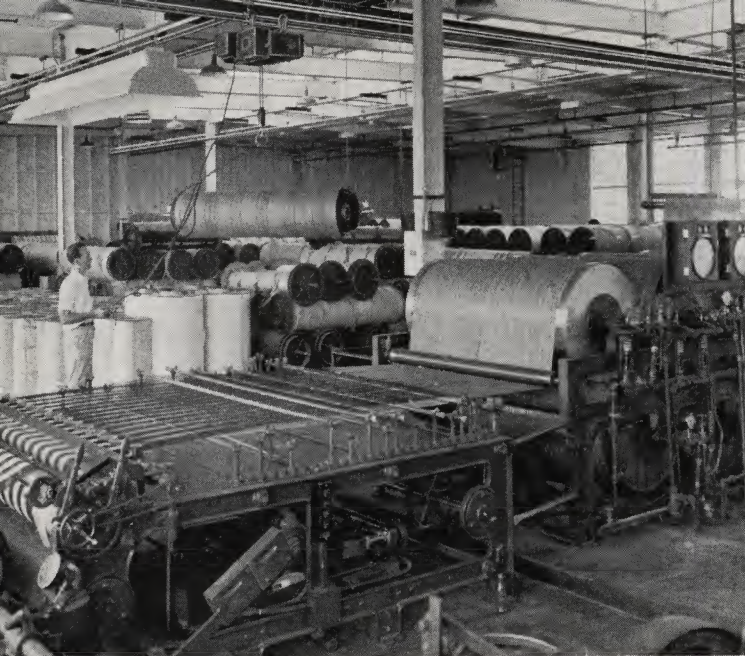
Beneath the over-riding mill crane these gantries furnish power-operated handling of ingots to grinders. All movement controlled from platform.



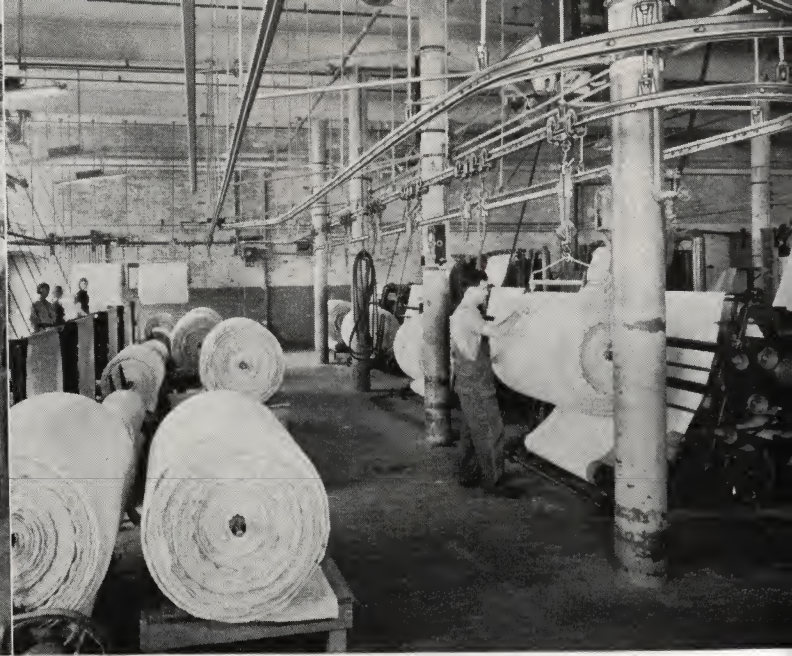
Finger-tip control of 5-ton loads of steel made possible by MonoTractor drive.

# AMERICAN MONORAIL



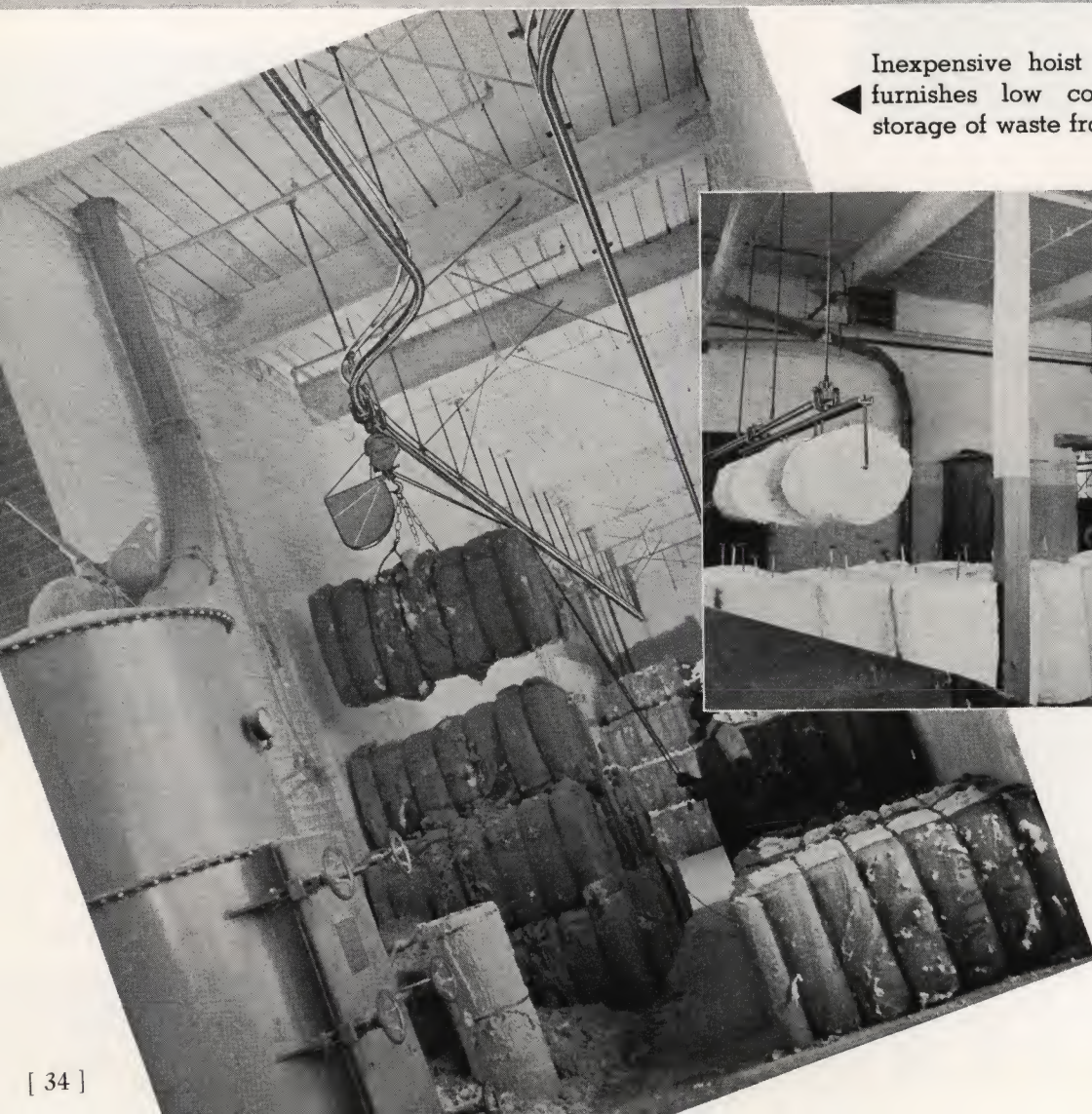


Hand operated crane with electric hoist covers storage area for serving slashers.



Rolls loaded by hoist on extra track move on monorail loop to inspectors.

# AMERICAN MONORAIL



◀ Inexpensive hoist and track system furnishes low cost handling and storage of waste from compress.



Laps are moved to cards easily with each carrier holding four laps on tracks extending throughout room.





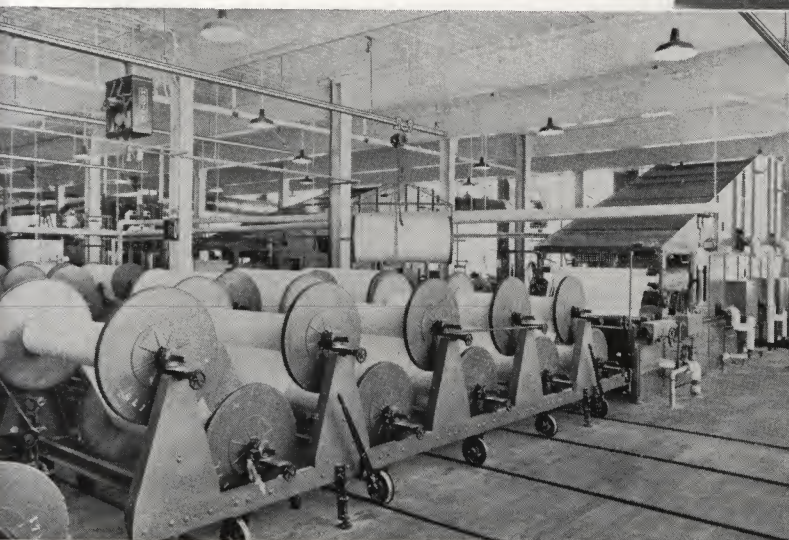
Crane and electric hoist complete the operation of package dye house.



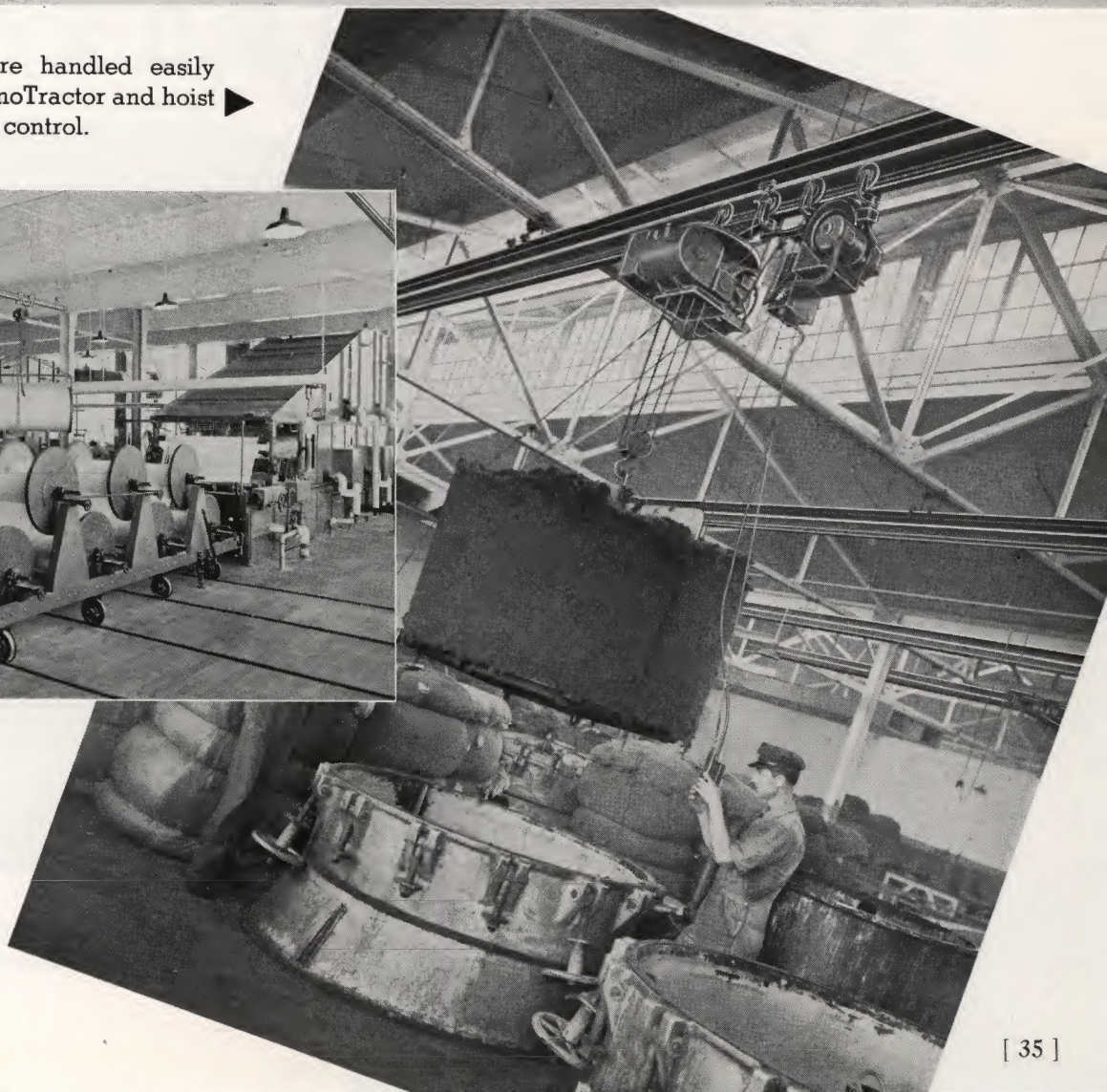
Overhead handling allows use of wide heads on looms in weave shed.

# I N T E X T I L E M I L L S

Loads like this are handled easily from kiers by a MonoTractor and hoist unit with fingertip control. ▶



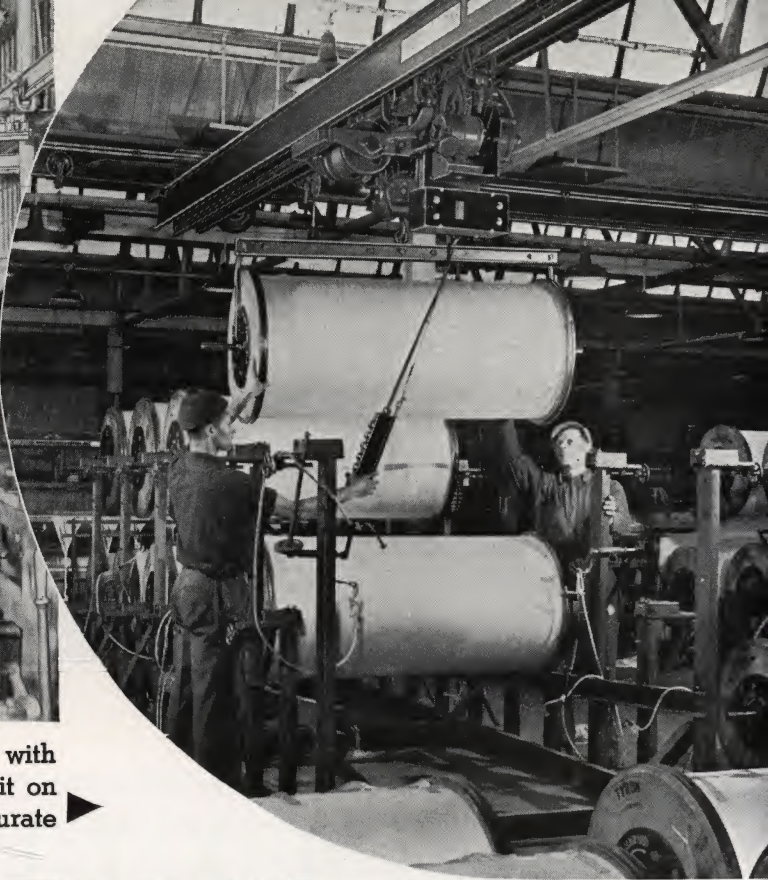
Movable creels loaded from hand chain hoist roll into position to keep slasher in production.







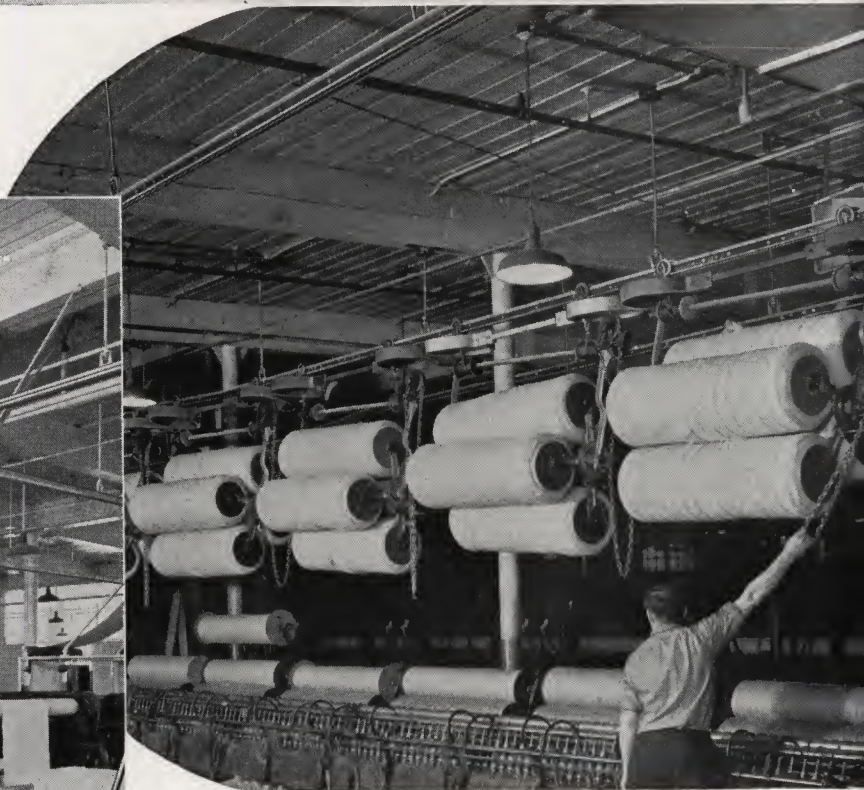
Interlocking cranes permit passage of rolls between jigs with complete coverage of dye house.



MonoTractor crane with MonoTractor hoist unit on bridge assures accurate spotting on creels.

# AMERICAN MONORAIL

Cloth rolls handled to inspectors on hand-pushed crane which interlocks with spur tracks throughout room.

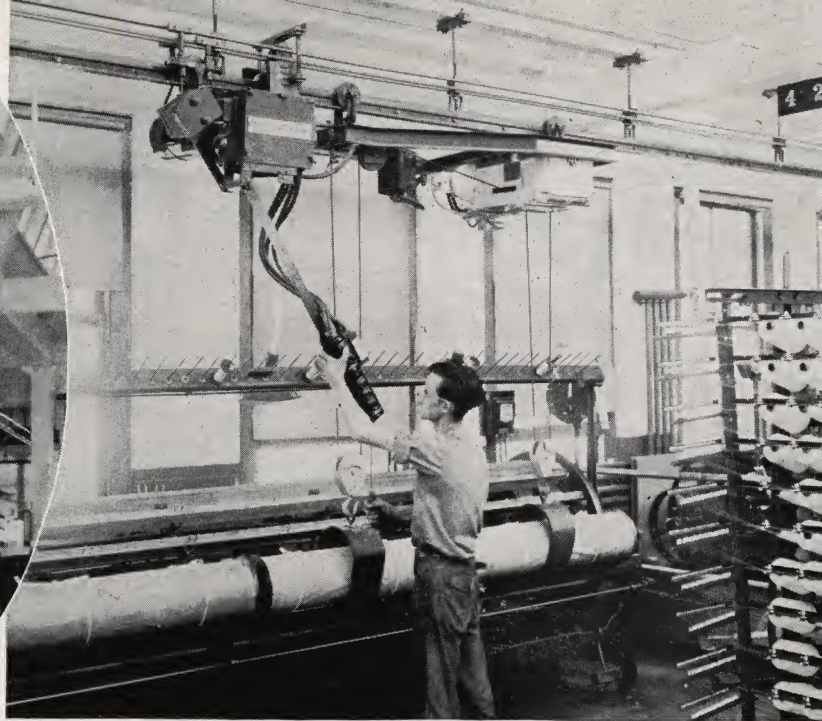


Wool jack spools on special carriers are pushed in trains with little effort between departments.





Grey goods from hosiery mill dispatched in special carrier to storage in other building.



Beam carrier with station selector runs automatically between stations by finger-tip control.

# IN TEXTILE MILLS



Slasher beams removed, stored and transferred on simple system with electric hoists at low cost.

Beams travel to tying-in room on tracks extending from system over the slashers.





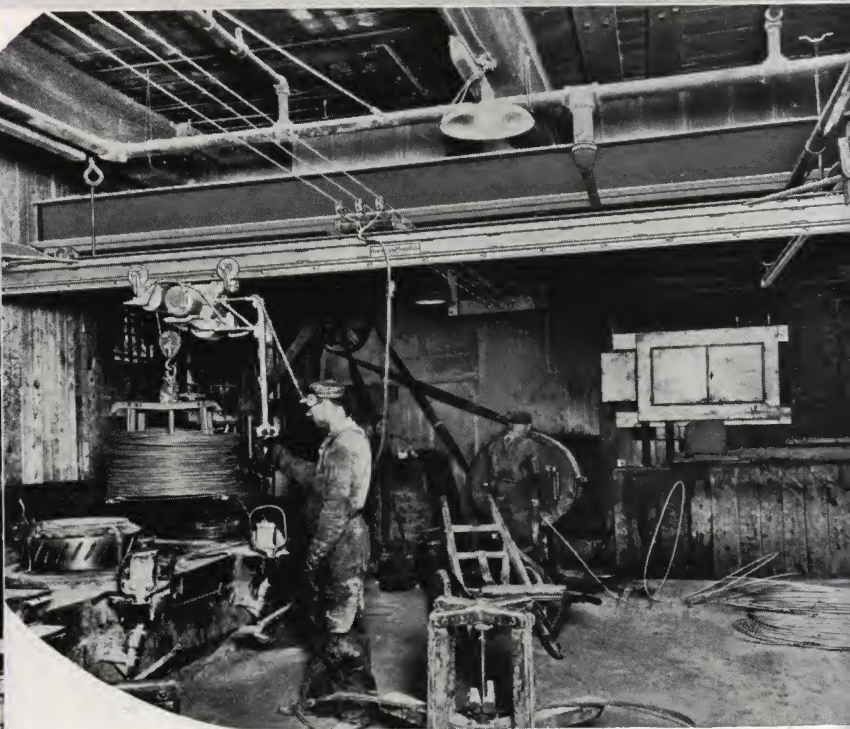


Unloading crane over gondola interlocks with spur track for passage of load to storage.

Double bridge cranes permit high piling to gain maximum use of warehouse area.

# HANDLING WIRE WITH

Power operated crane and electric hoist handles rod easily from push-button control for all movement.



Removing coil from block with electric hoist on hand-pushed crane. Note rigid control arm for easy handling.



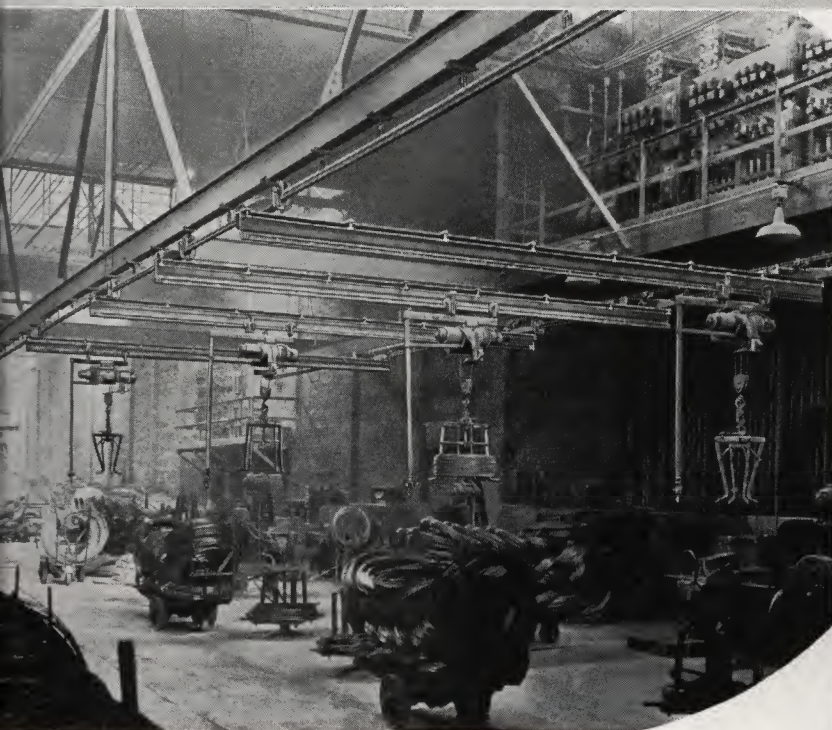


Outside rod storage served by cranes which interlock at cross-over for transfer of loads.



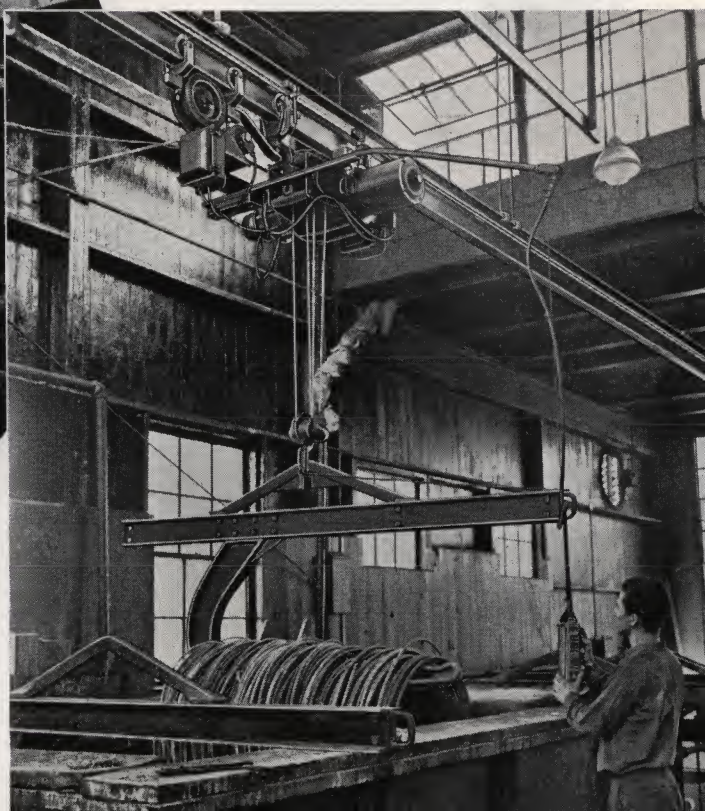
Crane over siding removes wire rod to cradle for pick-up by hoist on lower level. ▶

# AMERICAN MONORAIL



Battery of block stripping cranes maintain coil production in large wire mill. Special grabs aid removal of coils.

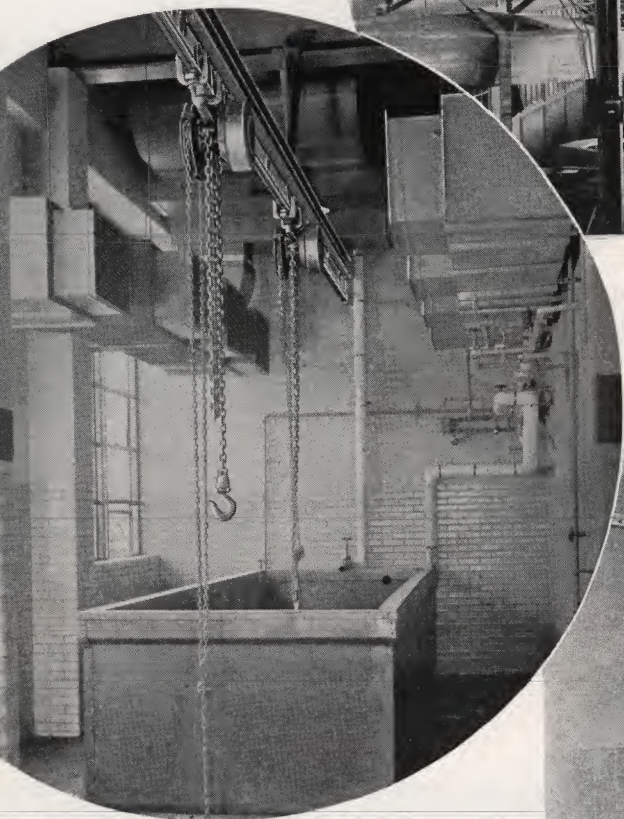
RailMaster system aids in rod pickling. Hair pin hooks move between various tanks by finger-tip control. ▼





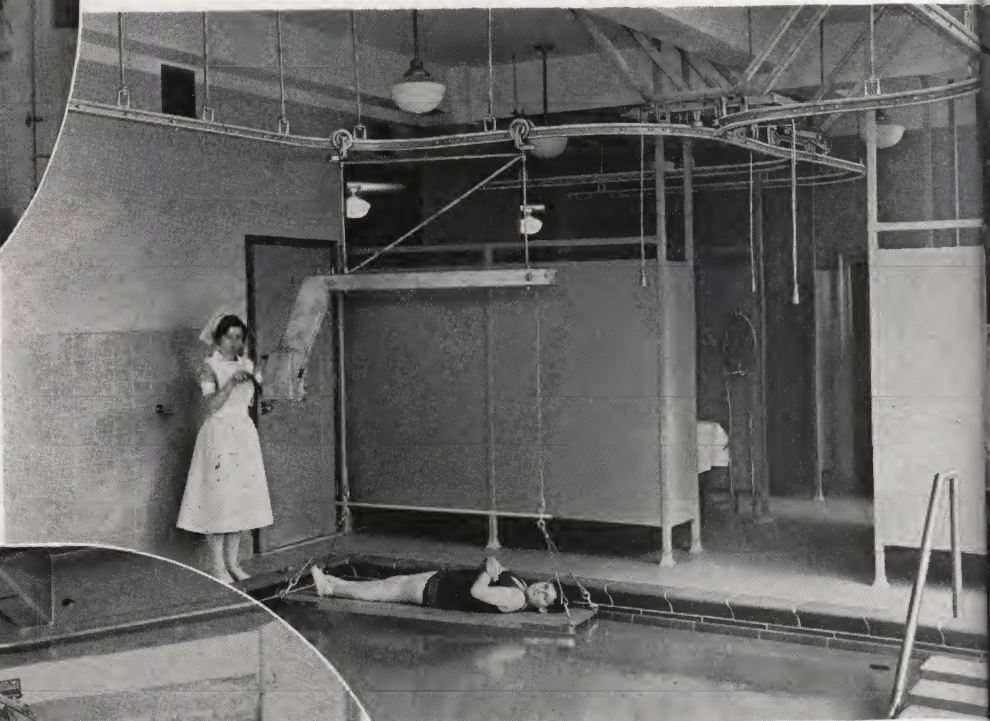
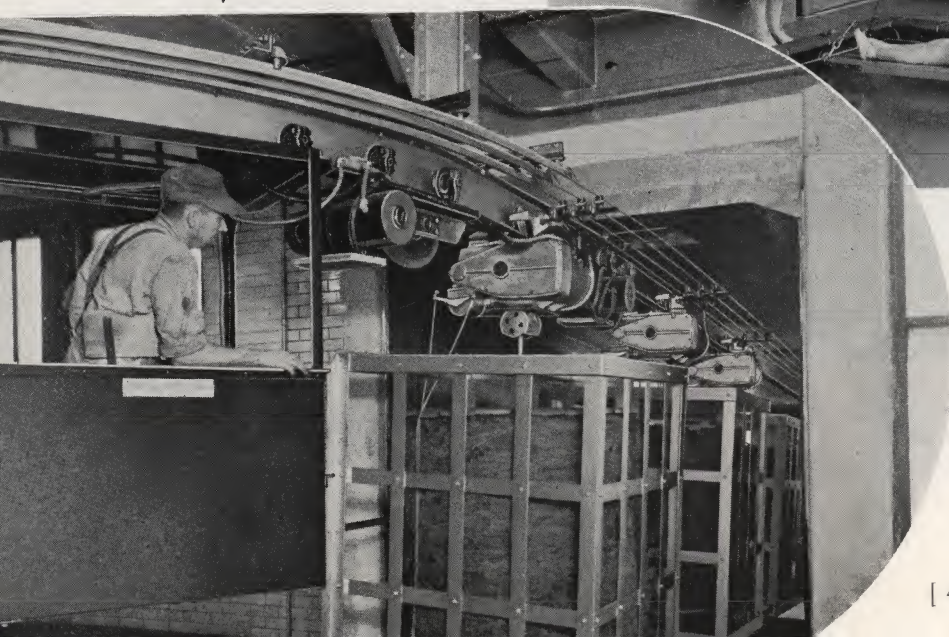
# MISCELLANEOUS JOBS ON

Spur track with chain hoists over solvent tank in large garage for cleaning truck motors.



Small boat production moves easily through assembly and finishing on simple MonoRail track system.

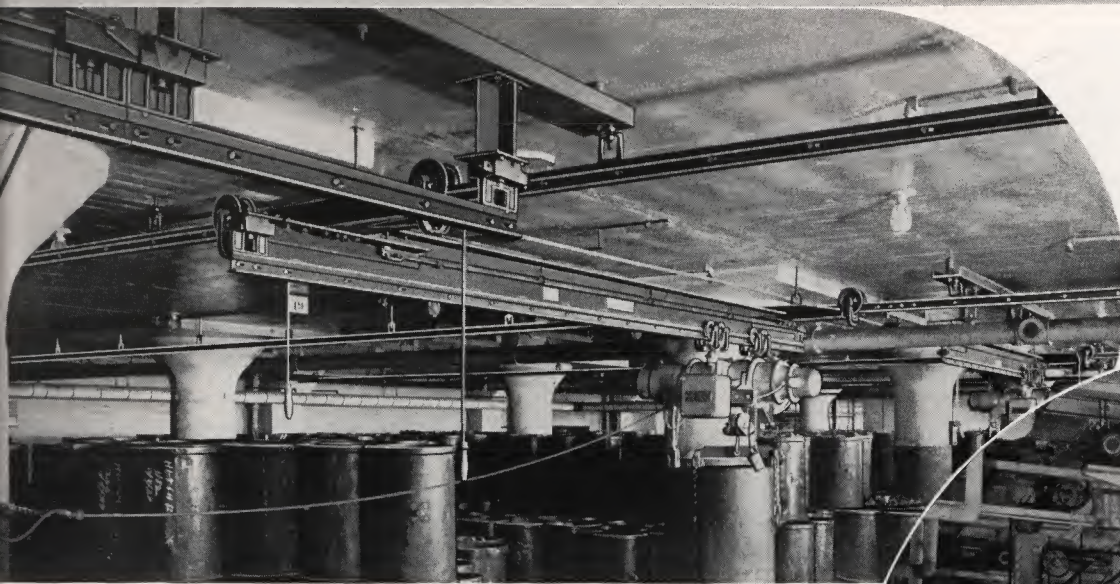
MonoTractors propel hogsheads of tobacco from plant to warehouse.



Special carrier handles paralysis patients from bed to pool for swim treatment in large university hospital.

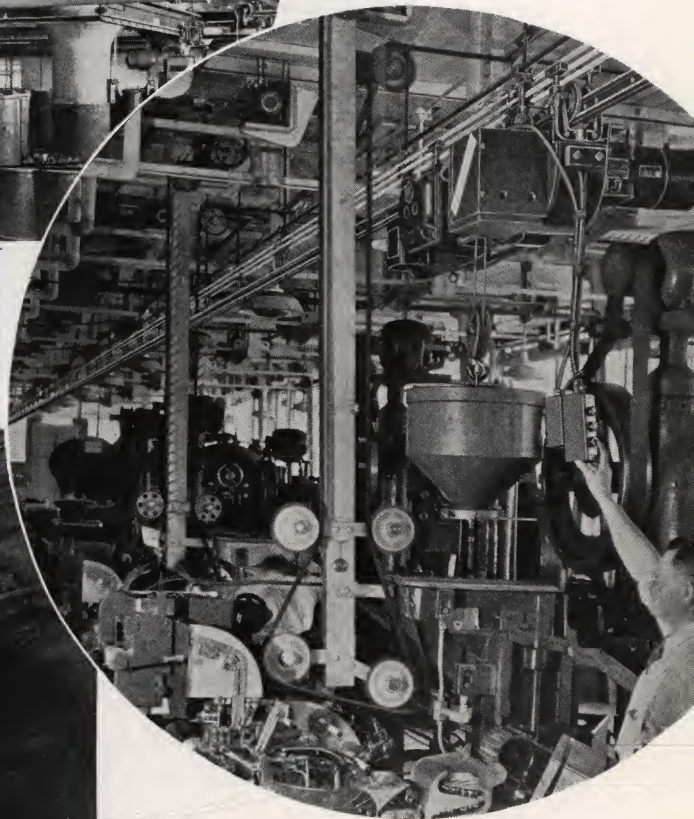


# AMERICAN MONORAIL

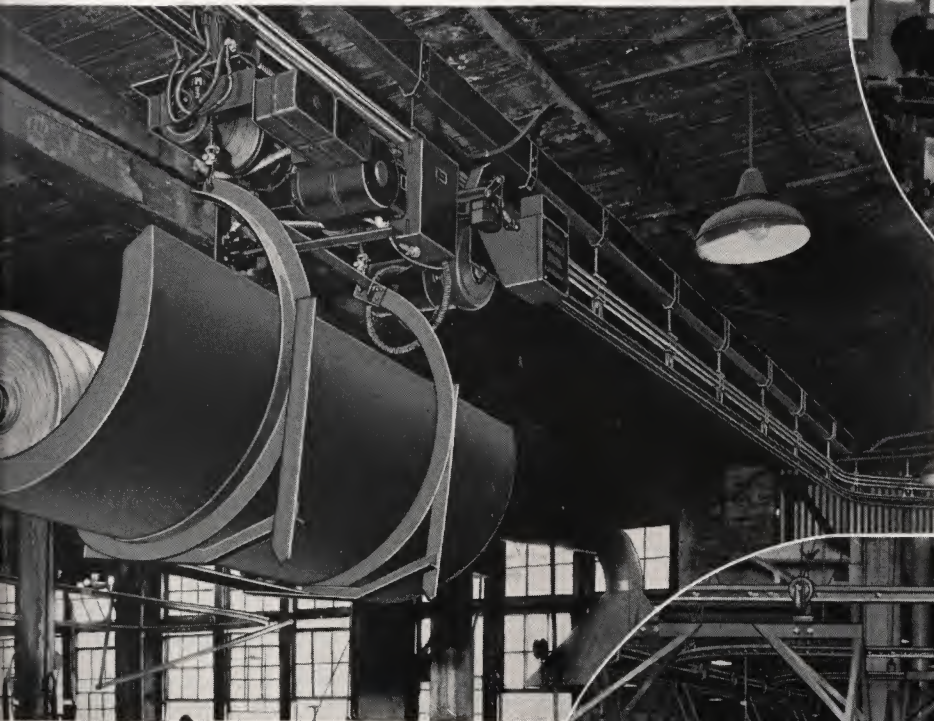


Interlocking cranes serve basement storage with special low-headroom bridge cranes for two tier piling.

Automatic dispatch carrier feeds slugs to machine operator from storage and returns by remote control.



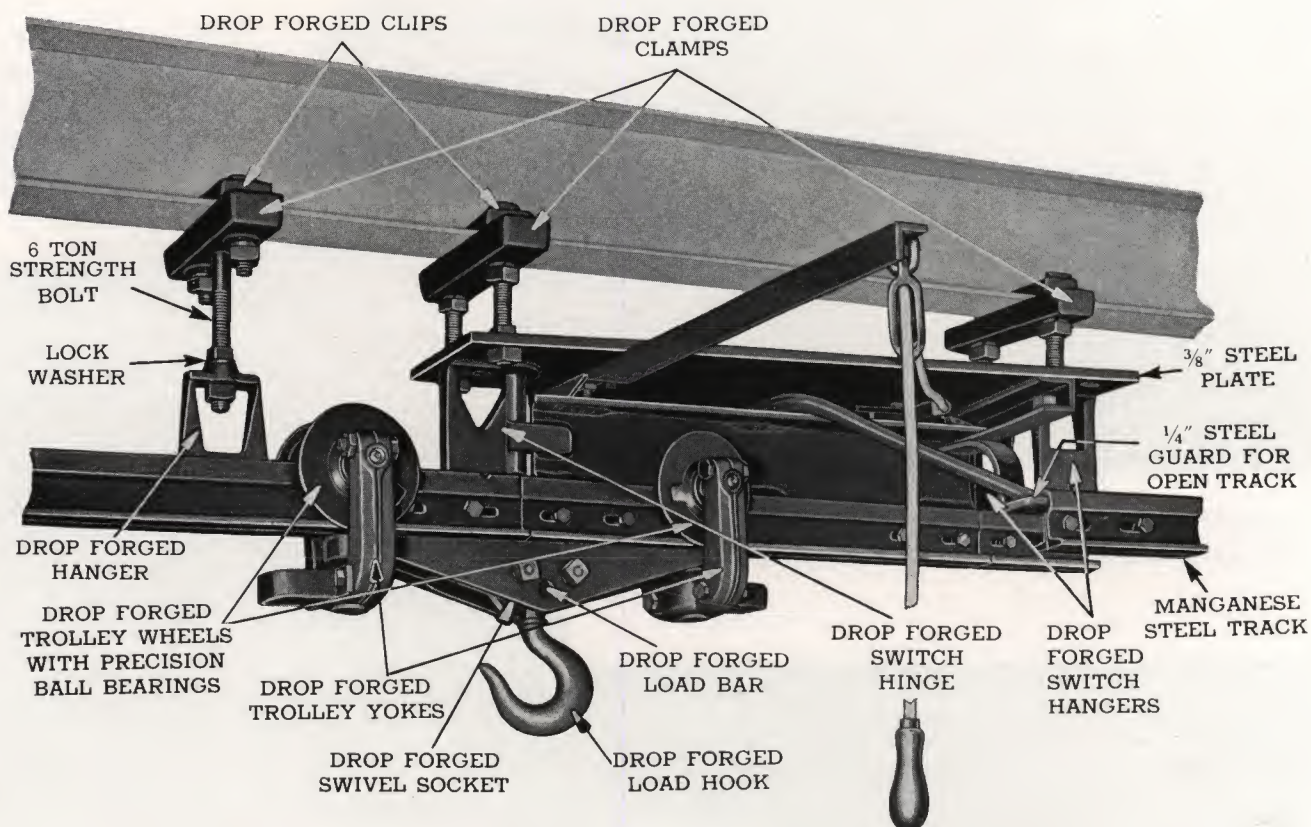
Order make-up system using wooden carriers for small orders.



Heavy rolls move from building to building on special carrier with automatic movement from loading point.







## STRENGTH AT ALL POINTS

Forgings provide a greater margin of safety. Their use at all points where heavy loads or unusual wear is likely to occur furnishes ample support for the great material and sectional strength of American MonoRail Standard Track.

With this extra strength in lighter sectional thicknesses, compact design of such parts makes possible the extreme flexibility of American MonoRail equipment.

## GUARANTEE

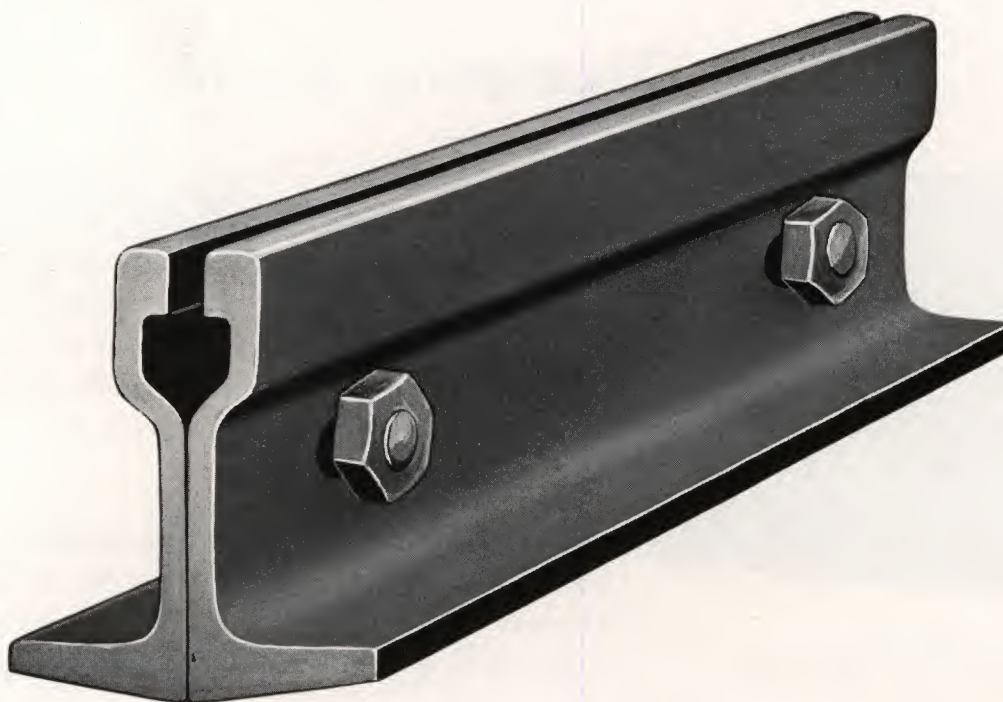
The American MonoRail Company guarantees, without qualification, the materials and workmanship entering into the manufacture of its products:

(a) and will furnish, F.O.B. its factory at Cleveland, Ohio, any part which, due to defect in material or

workmanship, fails within the first year of its operation;

(b) that the American MonoRail Company owns its own patents on designs; that its products are free from patent infringement; and that it will protect its customers accordingly.





# No. 401 American MonoRail Track

## SPECIFICATIONS

Re-rolled railroad steel, which meets the American Society for Testing Materials rigid specifications No. A-16-14, which call for a tensile strength of 80,000 lbs. to the square inch and a yield point of 50,000 lbs. to the square inch.

Rolled from the head of 80-pound rail.

Carbon Range, .45 to .65.

Manganese, .60 to .90.

Silicon, approximately .15.

Phosphorus, less than .04.

Average Brinell hardness, 210.

Twin sections bolted together, back to back. Self locking clamping bolts, spaced 12" on centers. Clamping bolts and nuts, special steel, heat treated.

Width of rail at lower flange, 2".

Height over all, 2 1/2".

Minimum thickness of web, 9/32".

Standard lengths in stock, 6, 8, 9, 10, 12, 13, 15, 16, and 20 ft.

Finish: Green Enamel.

Weight: 4.7 pounds per foot.

A rail in which every ounce of steel gives the greatest load carrying capacity, the material used being high grade railroad rail steel, re-heated and re-rolled. It is the toughest and finest material that can be obtained for a job where a combination of strength and resistance to rolling wear is required.

The assembled rail is made up of twin sections bolted together back to back to form a solid unit. The excep-

tional strength of the rail is due to the design and to the high quality of steel used, the lap splice and the

added strength provided by the Drop Forged steel hanger. The flanges are heavy and will never bend down under any load carried on the trolleys. The rail has a balanced section, the head of the rail being a mass of steel equalling the weight of the flanges, while the web has a minimum thickness of 9/32".

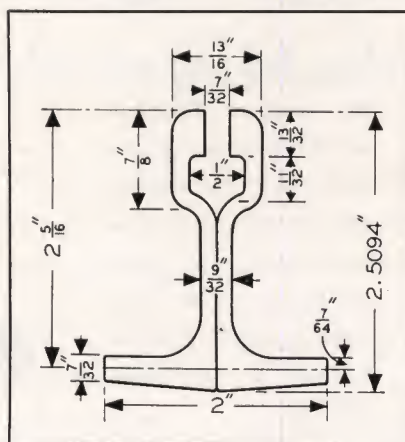


Fig. 43

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



## Rail Clamping Bolts



Fig. 44A

Rail Clamping Bolts in Place in Rail.

The automatic, positive, locking feature of the nuts and heads of MonoRail clamping bolts is unique. The bolt head and nut bind against the fillet or swell of the rail head. This does not prevent drawing the nuts tight with a wrench, but the binding resistance is sufficient to lock the bolt and nut securely in place. The bolts are special steel, heat-treated, having a tensile strength of 100,000 lbs. to the sq. in. The bolt heads will not break off nor will the threads strip.

The bolts are seated in slotted holes and are not subject to shear stress in service or when rail is bent. The clamping bolts are placed in the rail on 12-inch centers except at splicing points, where additional bolts are used. (See Fig. 45 on opposite page.)

## Rail Section with Forged Hanger in Place

The Drop Forged track hangers are clamped solidly inside the rail head. The rail has a tremendous grip on the hanger which prevents all tendency toward "creeping." The inside overhang of the rail head rests on the square projecting shoulders of the forged hanger. The hanger at this point is  $3\frac{1}{4}$ " wide and has a carrying capacity far beyond maximum ratings.

While the forged hanger is clamped solidly in place, its position can be changed or shifted in either direction by driving it with a hammer, without danger of damage to hanger or rail. It is not

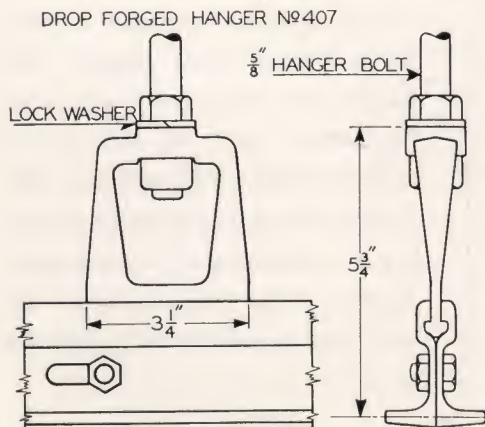


Fig. 44C

necessary to loosen bolts or nuts to change the position of the hanger. *Trolley wheels cannot strike against hangers clamped inside the rail head and have perfect clearance even in going around curves of shortest radius.*

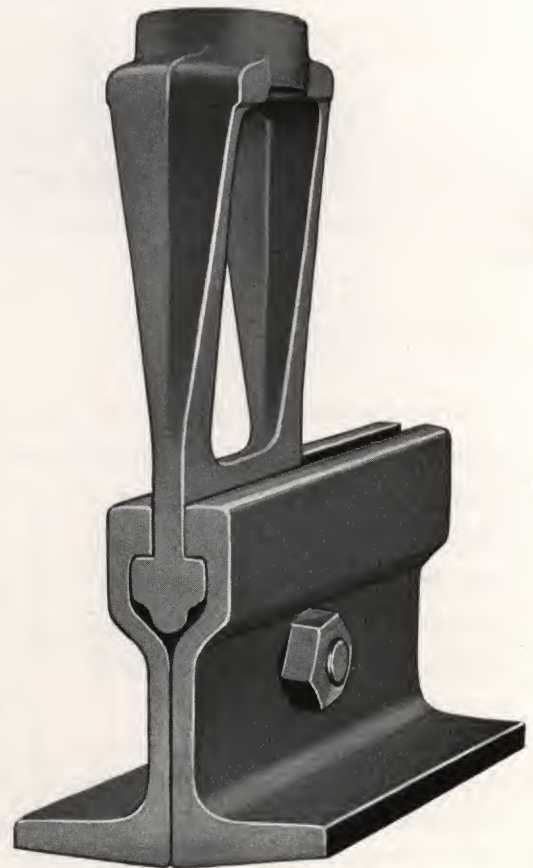


Fig. 44B

Rail Section with Forged Hanger in Rail.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 401 Assembled MonoRail

Track is assembled for shipment with hangers clamped in rail head spaced as required. The illustration also shows the lap at end for splicing onto the meeting rail. The clamping bolts used at each splicing point are so spaced that when necessary to bend the assembled rail in the field, there are always matching

holes for the clamping bolts. The slotted holes in which bolts are seated prevent any shear stress on the bolt when rail is bent. Clamping bolts are placed in the end lap ready for the splice, and when the splice is made and the nuts drawn tight, they are automatically locked and will never work loose.

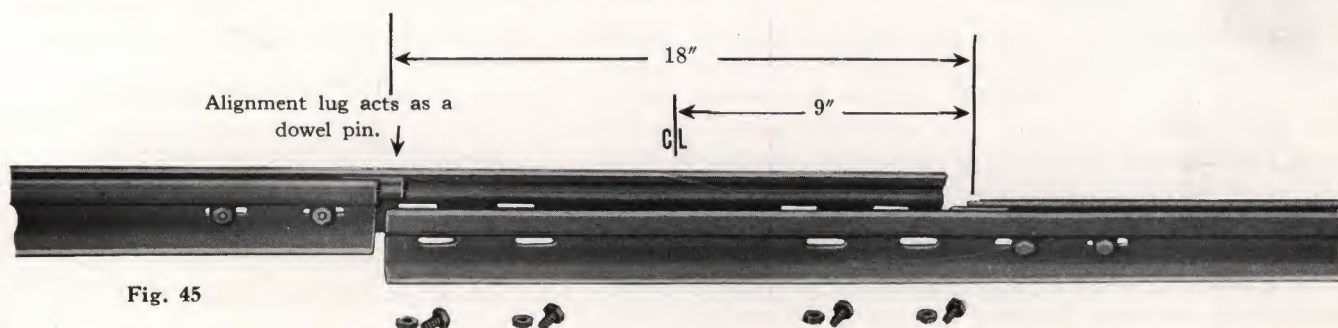


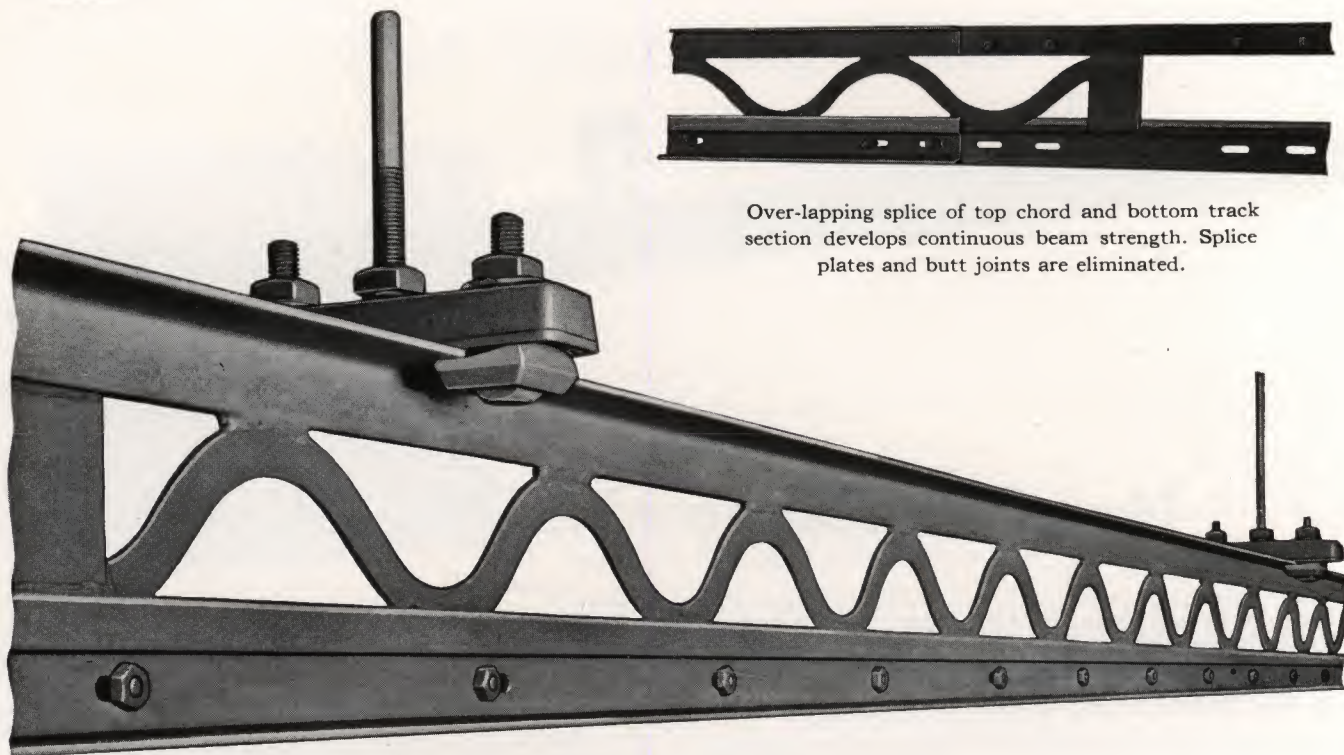
Fig. 45

## Splicing Method

The lap splice in the MonoRail system eliminates the use of splice clamps, staggers the joints, gives the runway the strength of a continuous rail, and does away completely with the roughness of a "butt" joint. In this way MonoRail has overcome the handicap of the "butt" joint which has always been regarded as the weak point in overhead track systems. The

wheels on trolleys pass over the splicing point on one side of the rail at a time without jolt, or jar, or vibration. This illustration shows the lapping ends of two assembled rail sections being brought together to form the splice. At the joint will be seen the alignment lug which brings the treads of the rail into perfect vertical alignment. Note that the splice break in the rail flange occurs 18 inches apart on opposite sides of the rail.





Over-lapping splice of top chord and bottom track section develops continuous beam strength. Splice plates and butt joints are eliminated.

## No. 434 American Truss Rail

American Truss Rail is a welded assembly consisting of a lower chord of Standard MonoRail and an upper chord of two angles back to back, joined by a specially formed web member which forms a true truss.

This furnishes a stiff, strong track unit which provides for long spans where superstructure would otherwise be necessary. It is adapted for use as crane runways and other applications which do not require the load capacity of American Girder Rail.

American Truss Rail is much lighter than a combination of Superstructure and standard MonoRail; its use greatly reduces erection cost as there is only a single unit to handle and put up. It is neat in design, provides maximum headroom and is economical in first cost.

The method of splicing Truss Rail, illustrated above, provides for smooth, strong, continuous trackage by the same long lap splice that is used in standard MonoRail.

Detailed information on the use of Truss Rail is given on pages 231 and 233.

### SPECIFICATIONS

**Lower Chord:** No. 401 Fabricated Track.

**Upper Chord:** Two Structural Angles.  
Size determined by table on page 232.

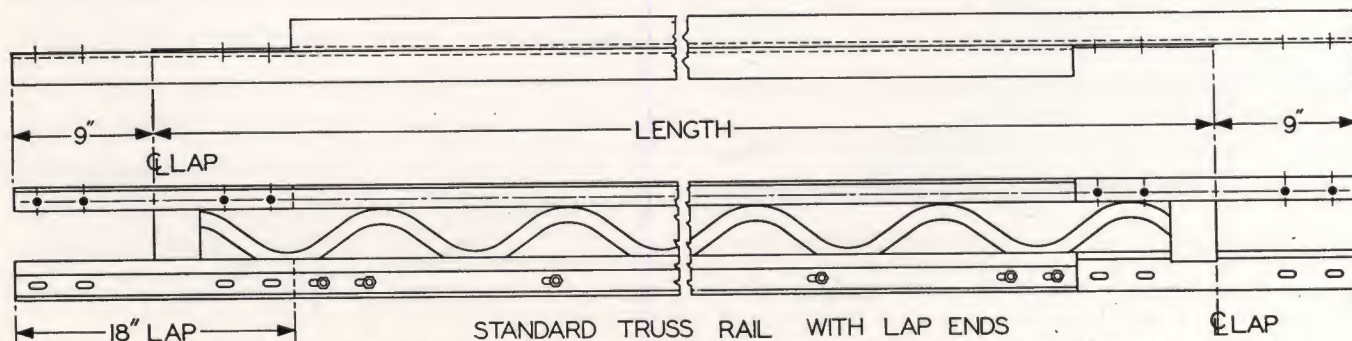
**Trussing Member:** Mild Steel Section,  $\frac{3}{16}$ " x 1".  
Solidly joined by arc welding.

**Lengths:** Furnished in 6, 8, 9, 10, 12, 15, 16 and 20 foot lengths.

Used for straight runs only with standard curves as shown on page 48.

**Finish:** Green Enamel.

**Weight:** Per foot, 12.7 pounds—4" flange;  
13.5 pounds—5" flange.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





Top flanges and rail sections are joined with an 18 inch lapped splice for increased strength and smooth trolley travel.



	<i>Lbs. per. foot</i>
No. 411- 7"	14.9 and 16.7
No. 417- 9"	18.0 and 22.0
No. 424-11"	23.3 and 25.5
No. 431-13 $\frac{1}{2}$ "	27.1 and 29.1

## American Girder Rail

### SPECIFICATIONS

**Lower Chord:** Standard MonoRail.

**Upper Chord:** Two structural angles, size determined by table on page 232.

**Web:** Steel plate, size determined by table on page 232.

Solidly joined by arc welding.

**Lengths:** Furnished in 10, 12, 14, 16, 18, and 20 feet, or fabricated to fit the job.

**Depth:** Furnished in 7, 9, 11, and 13 $\frac{1}{2}$  inch depths.

Used for straight runs only, with standard curves as shown on page 48.

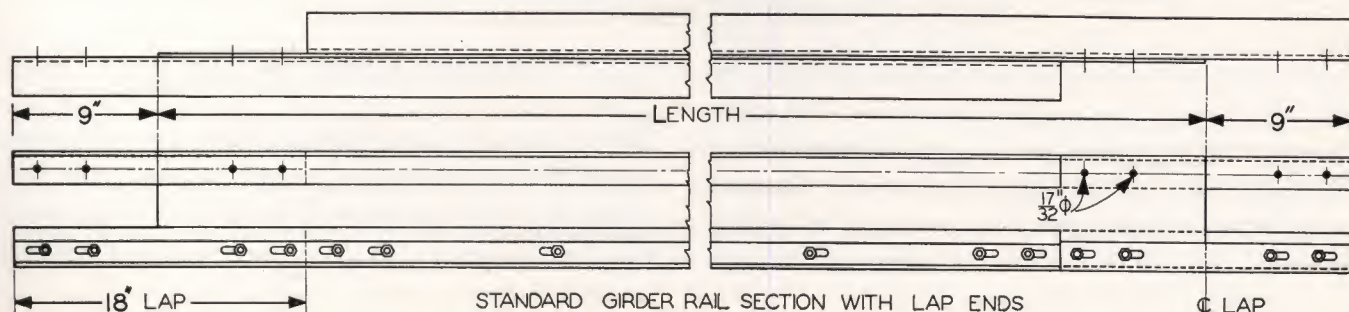
**Finish:** Green Enamel.

American Girder Rail has been developed to meet situations where widely spaced building superstructure members make necessary long unsupported spans in overhead trackage. Girder Rail is also used for bridge members of MonoRail cranes of various types; for track sections of MonoRail scales; track sections of MonoRail lifts, and similar applications where maximum strength must be combined with utmost stiffness.

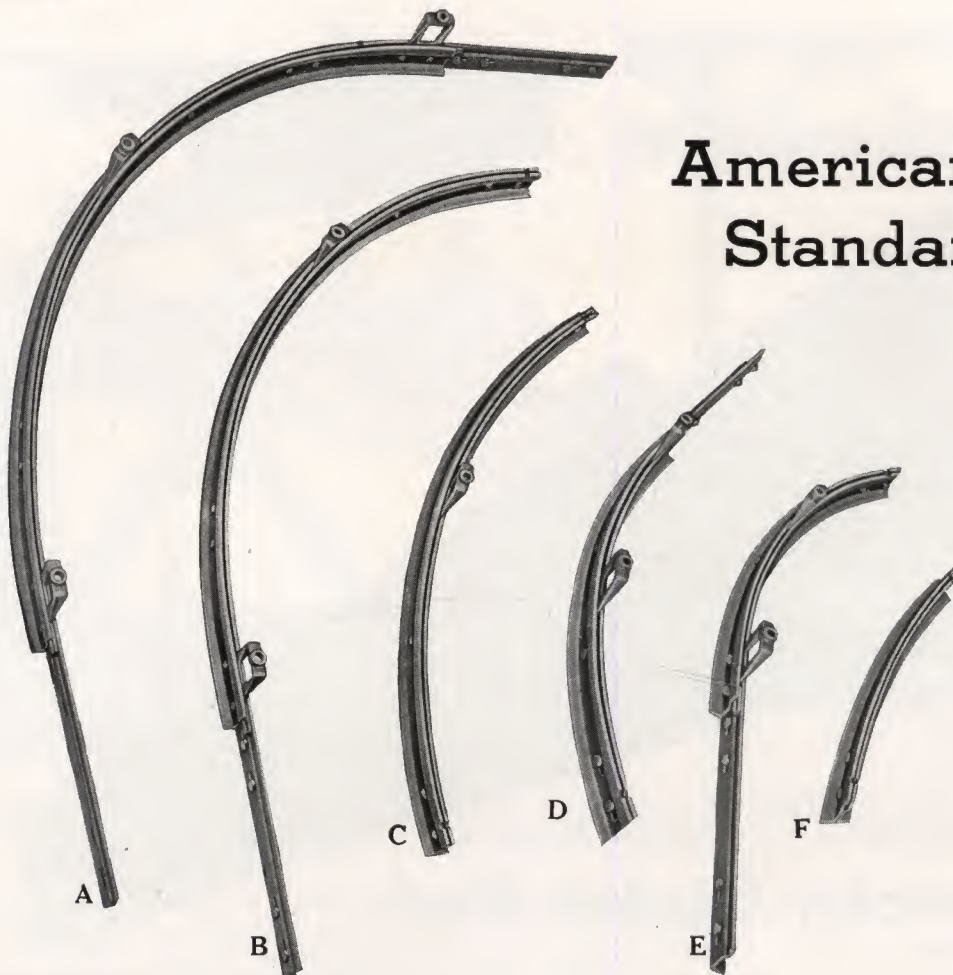
To the inherent great load-bearing capacity of standard MonoRail track has been added the support of a steel plate web, and the stiffening of two structural angles, electrically welded together. Thus we have embodied superstructure and track in one homogeneous unit.

The method of splicing shown above provides a union with a generous lap between two sections, that is exceptionally strong and stiff at the point of junction.

Data giving desired information on girder rail will be found on pages 231 to 233.







## American MonoRail Standard Curves

### Standard Series

- A—No. 1 Right or Left—46 lbs.
- B—No. 2 Right—31 lbs.  
No. 3 Left—31 lbs.
- C—No. 8 Right or Left—20½ lbs.

### Short Series

- A—No. 9 Right or Left—33 lbs.
- B—No. 10 Right—26 lbs.  
No. 11 Left—26 lbs.
- C—No. 16 Right or Left—15 lbs.

### Glide Switch Series

- A—No. 17 Right or Left—35 lbs
- D—No. 18 Right—18½ lbs.
- E—No. 19 Left—18½ lbs.
- F—No. 20 Right or Left—12 lbs.

Standardized curves that provide for every situation where track meets at an angle in an American MonoRail System offer the following advantages:

- Greatly increased flexibility in track layouts;
- Standardization makes track rearrangement easy and inexpensive;
- Permits immediate shipment of standard curves;
- Extensions or revisions made from original data in our files.

Curves are assembled for shipment with suspension hangers in place. Hangers, however, are not priced with curve, but should be included in the order for MonoRail hangers. To determine number of hangers required for each curve, refer to the proper curve as illustrated above. On pages 236 to 239 are diagrams which give the key to the whole system of MonoRail curves. It will be noted that curves are divided into four groups, making proper selection easy.

### STANDARD SERIES

Curves in this series should be used in track layouts that permit spacing of five feet from the intersection of tangent lines to the center of the lap splice or to the switch hinge. See page 236.

### SHORT SERIES

Curves of this series allow a shorter measurement of four feet from intersection of tangent lines to center of lap splice or hinge of switch. See page 237.

### GLIDE SWITCH SERIES

Curves of a uniform radius of three feet are used with glide switches. Reference to page 239 will show but three foot spacing between intersection to break in rail for single switches, 4 feet being required for the various switch groupings shown.



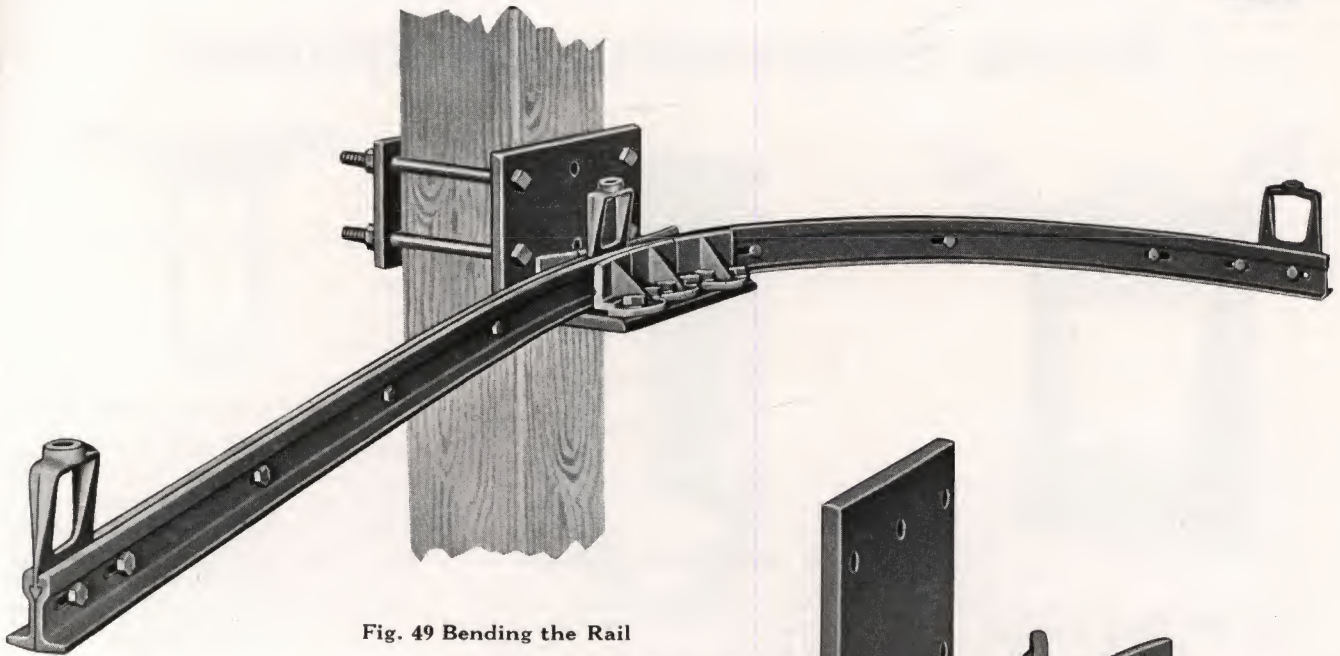


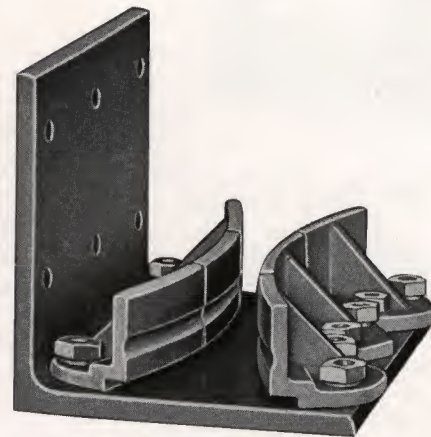
Fig. 49 Bending the Rail

## BENDING THE RAIL

A valuable service rendered the purchaser of an American MonoRail System, where definite plans and specifications are furnished, is the complete fabrication and assembly of the MonoRail sections at the factory to fit the job.

If changes in the track plan are likely to occur, it is advisable to have a Rail Bender on the ground in order that the track can be formed in the field to fit into any last minute changes.

American MonoRail can be bent in the field to secure any desired track arrangement involving the use of curves. The Rail Bender, shown in the illustration above, is furnished if desired, subject to return when the installation is complete. It may be bolted to a post, column, or mounted in any convenient manner, and the rail bent to the desired radius.



## No. 432 Rail Bender

Weight 46 Pounds

The rail is of high-carbon content, and is stiff, and harder to bend than mild steel, but with the Rail Bender it can be formed into any curve section.

Where MonoRail is bent in the field, it may be necessary to cut one side of the assembled rail in order to maintain the 18-inch overlap. This should always be done to avoid rough joints.

• • •

## ENGINEERING SERVICE AVAILABLE

This catalog contains full information for making layouts of a complete overhead handling system. When approved plans are furnished, we will fabricate the rail, number each part and ship, ready for erection, with explanatory blueprints carrying identifying numbers. See page 227 for typical plan.

Where the handling problem or shop layout is complicated, we advise a preliminary survey by an American MonoRail engineer without obligation. On such complex jobs we will cooperate with the customer's engineers to work out the most efficient track layout for the application.



# Track Suspension Equipment



**No. 407 Drop Forged Hanger**

No. 407 Hanger is a one piece drop forging which is assembled in the rail head for adjustable bolt suspension. It has a load bearing strength in excess of seven tons. On pages 52, 53, and 252 are shown various hookups between MonoRail hanger and superstructure. Weight, one pound.



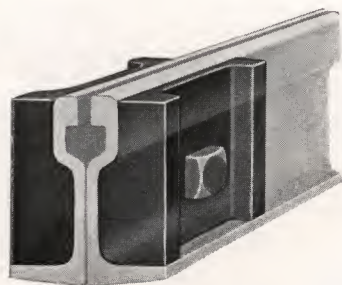
**No. 470 Rigid Hanger**

This solid drop forged hanger provides direct suspension of track running under wood or steel superstructure. It is drilled for  $\frac{1}{2}$ " bolts or lag screws, with holes spaced  $2\frac{1}{2}$ " on center. See page 251 for dimension detail. Weight,  $2\frac{1}{2}$  lbs.



**No. 472 Ceiling Buckle**

This buckle forms a support for  $\frac{5}{8}$ " hanger rods when suspended from expansion shields or cinch anchors in concrete ceilings. Top flange assures rigid attachment. Limited adjustment of track suspension is possible. See dimension details on page 252. Material—malleable iron. Weight,  $1\frac{1}{2}$  lbs.



**No. 414 End Stop**

End stops bolted to both sides of the rail prevent trolleys from running off track ends. End stops are furnished bolted in place where dead end track sections are specified. Material—malleable iron. Weight, 1 lb.



**Hanger Suspension Bolts**

When ordering specify correct number of bolts for use with manual or electrified track.



**Hanger Bolt**

No. 428—With  $4\frac{1}{2}$ " Thread  
No. 422—With  $8\frac{1}{2}$ " Thread

Hanger Bolts are formed from  $\frac{5}{8}$ " rod having a load bearing strength in excess of six tons. Lengths up to 24" are furnished with square upset head. For longer lengths use No. 491 or No. 493 stud bolts. Bolts are equipped with one square nut, one jam nut and one lockwasher. The square nut is seated inside the No. 407 Hanger, and jam nut drawn down tight on top to lock the bolt firmly. Weight, 18 oz. per ft.

**Stud Bolt**

No. 491— $4\frac{1}{2}$ " Top and  $8\frac{1}{2}$ " Bottom Thread  
No. 493— $4\frac{1}{2}$ " Top and  $4\frac{1}{2}$ " Bottom Thread

Stud bolts are necessary where the fixed head of the hanger bolt cannot be used. They are made from  $\frac{5}{8}$ " rod threaded on both ends according to the specifications listed with the above identifying numbers. Use No. 491 bolt for electrified systems. Stud bolts are made in all lengths and equipped with three square nuts, one jam nut and two lockwashers. Weight, 18 oz. per ft.

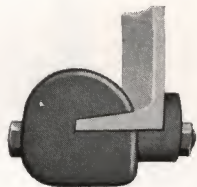


## Track Suspension Equipment—Continued



### No. 453 Ceiling Cleat

This ceiling cleat, bolted to any horizontal surface, furnishes simple and economical track suspension, using hanger bolts of proper length to secure track level. Cleat is pressed from steel bar. Dimension detail shown on page 252. Weight,  $1\frac{1}{2}$  lbs.



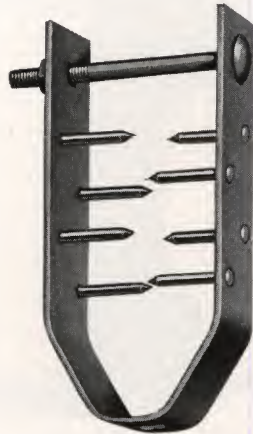
### No. 456 Channel Clamp

A clamp designed for suspension from channels with flange width not over  $2\frac{5}{8}$ " or thickness not over  $\frac{5}{16}$ ". Illustrated with clip No. 425 for channel support. Figure 53A, page 53, shows clamps No. 456 and No. 486 combined for offset suspension under beam structure. Material—malleable iron. Weight,  $\frac{3}{4}$  lbs.



### No. 484 Pipe Clamp Brace Fitting

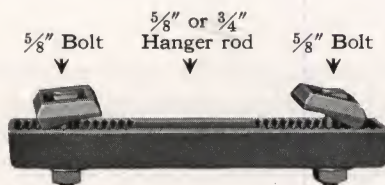
This adjustable clamp permits easy bracing with 1" diameter pipe. The fitting firmly clamps the end of the pipe which is cut to approximate length. It can be adjusted to exact length at erection, making close measurement unnecessary. Bolt flange may be bent to required angle. See Figure 53C on page 53 and detail on page 251. Clamping bolts furnished. Flange drilled  $\frac{1}{16}$ " for mounting bolt. Weight,  $1\frac{3}{4}$  lbs.



### Wood Beam Brackets

No. 488—2" No. 404—4" No. 487—6"

These brackets for supporting MonoRail track from wood beams are attached by  $\frac{3}{8}$ " bolts and special barbed boat nails. Brackets are formed from  $1\frac{3}{4}$ "x $\frac{1}{8}$ " stock with center of bolt holes approximately  $5\frac{1}{2}$ " from bottom of beam. Bolts and nails furnished. Weight 1 lb.



### Beam Flange Clamp

No. 479—Max.  $5\frac{1}{2}$ " Flange

No. 480—Max.  $8\frac{1}{2}$ " Flange

Drop forge parts combine strength with flexibility in furnishing these load carrying supports for use under beams ranging from  $2\frac{1}{4}$ " flange width to  $8\frac{1}{2}$ " width. See illustrations, pages 52 and 53, for application, pages 251 and 252 for dimensions. Weight—No. 479,  $4\frac{1}{2}$  lbs.; No. 480,  $5\frac{3}{4}$  lbs.

NOTE—Illustrations on pages 52 and 53 show application of suspension equipment, while dimensional detail is shown on pages 251 and 252.



### No. 419 Side Bracket

For those cases where the bracket must be mounted on the side of beams for  $\frac{5}{8}$ " bolt suspension, this bracket gives adequate support. Two bolts for top holes are furnished when size of beam is specified. Boat nails furnished to supplement bolts. Material—malleable iron. Weight,  $1\frac{3}{4}$  lbs.



### No. 418 Track Brace Bracket

This bracket is used as a brace against track sway by mounting above the track hanger and on the ceiling with diagonal connecting supports. Material—malleable iron. Bottom slot  $\frac{1}{16}$ " for  $\frac{5}{8}$ " bolt. Top hole  $\frac{9}{16}$ " for  $\frac{1}{2}$ " bolt. Small holes for boat nails. See dimension detail on page 251.

Weight,  $1\frac{1}{4}$  lbs.



### No. 455 Suspension Buckle

Used for diagonal support as illustrated in Figure 53G, page 53, and as a bracing against track sway. This buckle is made of high grade malleable iron. Details shown on pages 251 and 252. Weight,  $2\frac{1}{2}$  lbs.





**Fig. 52A**

MonoRail suspended under double channel superstructure. Adjustable bolt suspension with MonoRail hanger.



**Fig. 52B**

MonoRail suspended by rigid hanger, No. 470, bolted to lower flange of I-beam superstructure.



**Fig. 52C**

MonoRail suspended from I-beam clamp, No. 479, with adjustable bolt suspension to rail hanger.



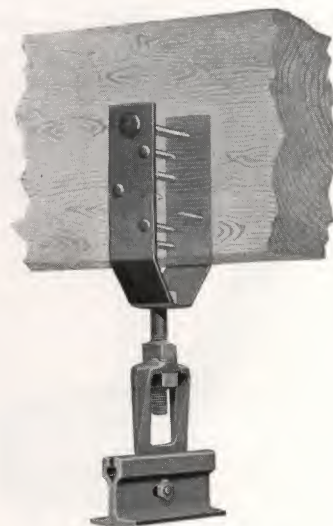
**Fig. 52D**

MonoRail suspended from wood beam using side beam bracket, No. 419. Bolt suspension must always be used with this bracket.

## ERECTION SERVICE

The American MonoRail Company will furnish skilled erectors for installing equipment shown in this catalog when desired.

Quotations will be made on completely erected systems or on equipment shipped F.O.B., Cleveland, Ohio, for erection by your men. The service of an erection superintendent is also available on a per diem basis. On the more complicated systems this erection service will save time and unnecessary extra cost.



**Fig. 52E**

MonoRail suspended under wood beam with adjustable bolt suspension between rail hanger and beam bracket.

## TRACK SUSPENSION METHODS

No overhead material handling system can be stronger than the units which support the track.

Beside strength, the factors of headroom saving, and ease and low cost of installation have been kept constantly in mind in developing the various types of suspension equipment for American MonoRail.

Every unit has been figured with a surplus of strength for a liberal margin of safety. Advantage has been

taken of every opportunity to save headroom. The hookup between the rail runway and the overhead beam or ceiling where headroom is at a premium is as close as can be and still allow trolley wheel clearance. Where wood beams make up the superstructure, bolts and nails are furnished for attaching the wood beam brackets. Clamping bolts are furnished with I-beam brackets.



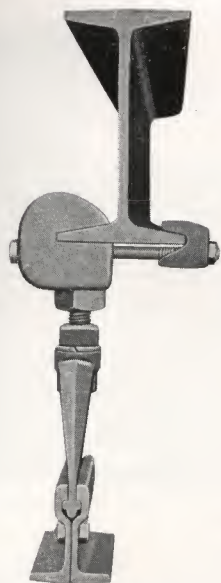


Fig. 53A

Offset suspension by combination of channel clamp No. 456 and flange clamp No. 486.

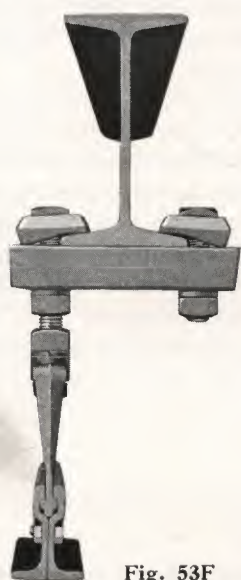


Fig. 53F

Offset suspension for MonoRail track, providing adjustable bolt suspension

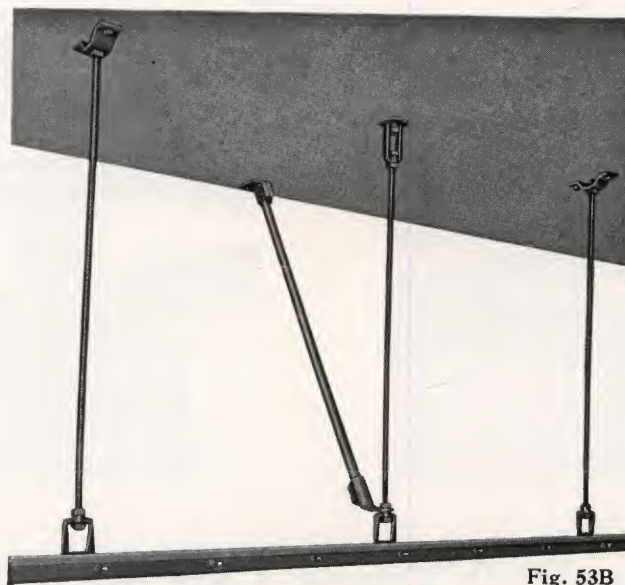


Fig. 53B

Fig. 53C

Fig. 53D

Fig. 53B. MonoRail suspension using ceiling cleat, No. 453 with adjustable bolt suspension and MonoRail hanger. Fig. 53C. Pipe clamp Brace Fitting No. 484 used to brace track. Attached to ceiling, and to track at hanger. Fig. 53D. MonoRail suspension using ceiling buckle, No. 472, with adjustable suspension using stud between ceiling buckle and MonoRail hanger.



Fig. 53E

Flange clamp, No. 456, with No. 425 clip providing adjustable bolt suspension for MonoRail track.

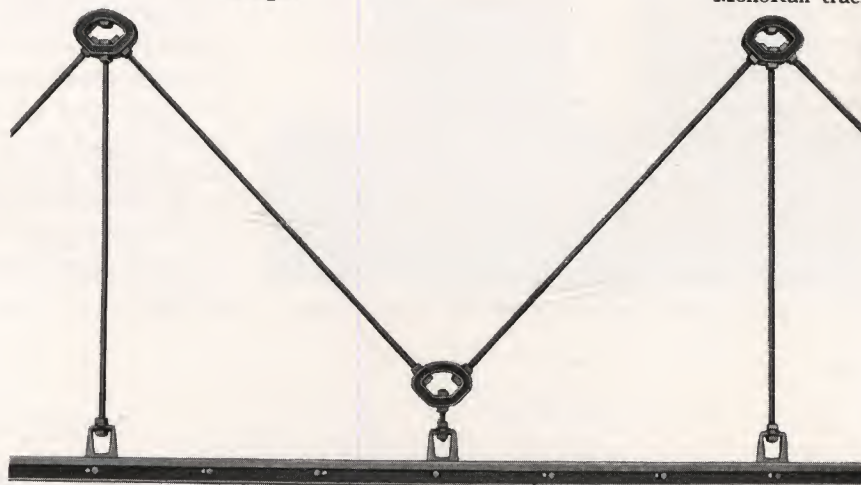


Fig. 53G

MonoRail suspension using suspension buckle, No. 455, with rod for trussing long spans or bracing against sway. See diagrams on pages 251 and 252.

## TRACK SUSPENSION METHODS

The factors of low cost and ease of installation will be easily recognized from the fact that in many cases the work may be done by shop gangs under supervision of master mechanic or millwright, or by local labor. Where layout and all dimensions and clearances are given as described on page 228, only such corrections as are necessary to fit building variations need be made in erecting the system. Where erection is handled by customer, blueprints are furnished on

which all parts are plainly numbered to indicate the location of the various units.

On these pages are illustrated American MonoRail suspension units with examples showing their application under varying conditions of superstructure.

*Note: Approximately one half of American MonoRail is installed without the use of additional superstructure.*



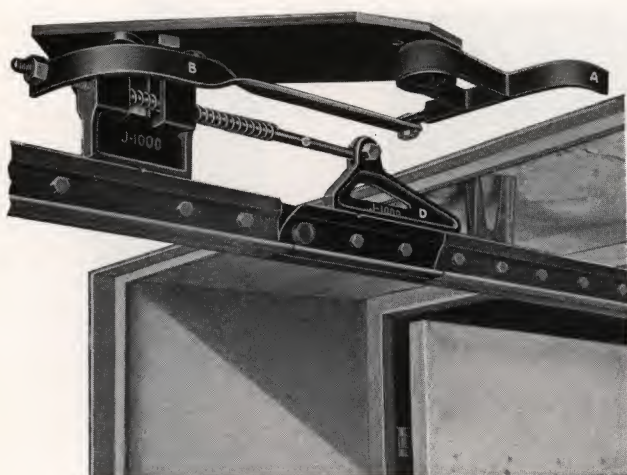


Fig. 54A

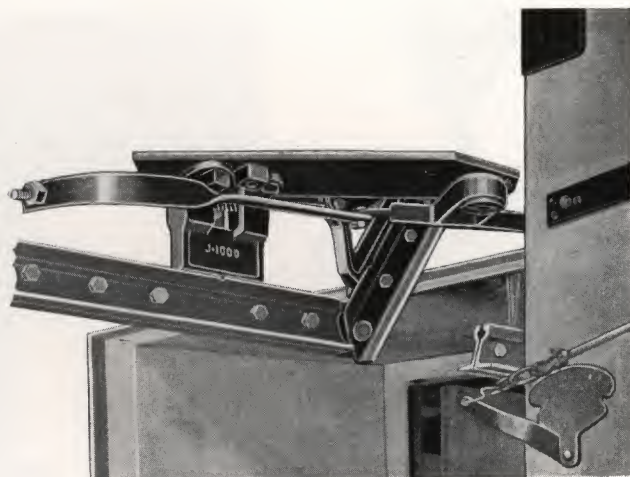


Fig 54B

## No. 1097 MonoRail Track Opener For Fire Doors

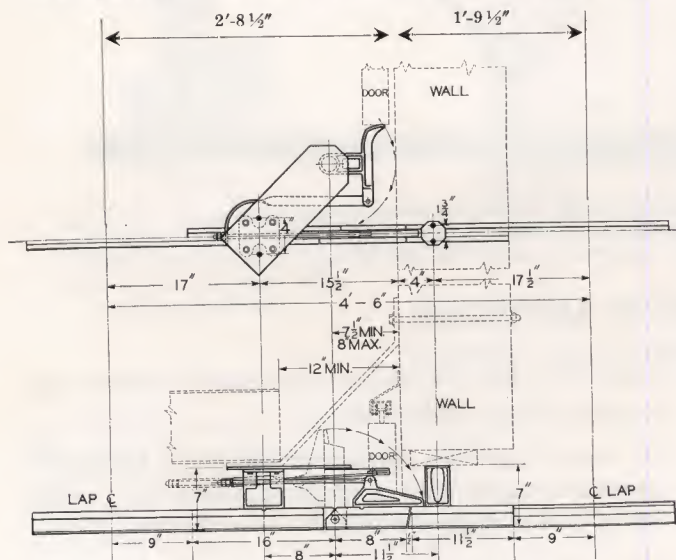
In the extension of a MonoRail system through a factory, warehouse or stock rooms, it is frequently necessary to route the track through doorways protected by automatically operating fire doors.

The MonoRail Automatic Fire Door Track Opener provides a positive, never-failing means of opening the track for the passage of the fire door in case of fire. With this automatic device installed the fire risk is not increased by the passage of MonoRail track through the door opening.

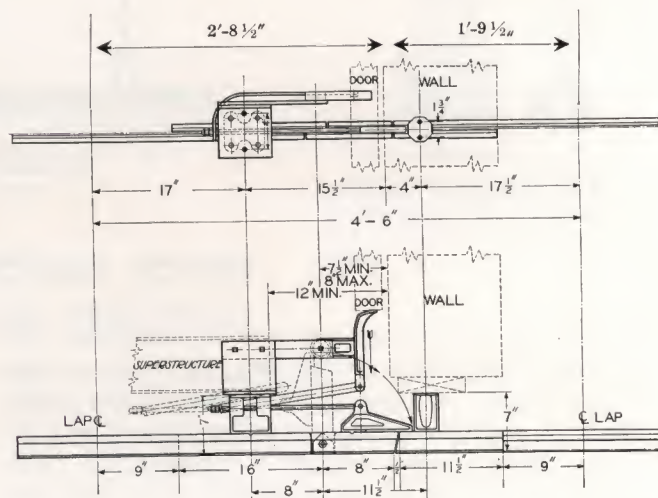
In the above illustrations Figure 54A shows the fire door open for travel of trolley through the open door. As the fire door closes, it strikes the lever "A" which rotates and pushes the connecting bar "B" away from

the door. The pull rod "C" raises the hinged section of track "D" and opens the way for the door to pass through. When the door is opened and lever "A" is released it returns to the original position, the hinged track section falling back into place.

Individual parts of this assembly are of heavy malleable iron yet the action is so free that the weight of a very light door will open the track at the proper time. Details below show application to both vertically and horizontally operated doors. Detail of track opener for an electrified system is shown on page 96 and additional information including door closures will be found on pages 244 and 245 in the Engineering Data section.



Detail of Track Opener with horizontally operating fire door.



Detail of Track Opener with vertically operating fire door.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# AMERICAN MONORAIL SWITCHES

Because the rail and trolleys are so skillfully designed, American MonoRail switches are extremely compact since very little throw or shift is required to clear trolley yokes which must pass through them.

Both the tongue and glide type switches are remarkably flexible in application allowing close spacing of branch tracks. Diagrams on page 242 show minimum spacings for various switch arrangements.

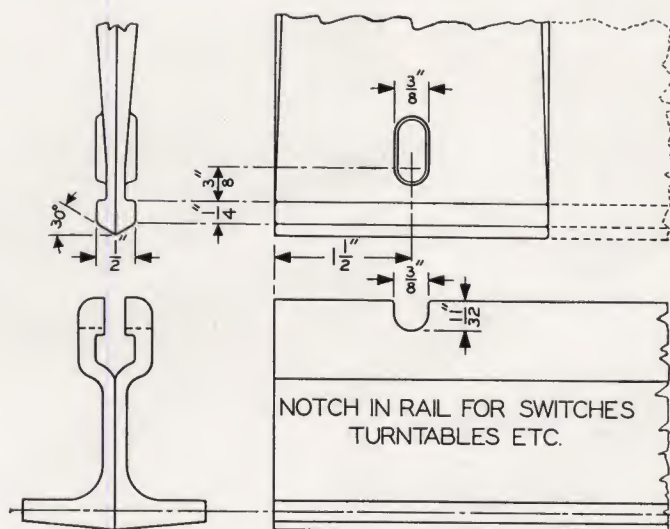
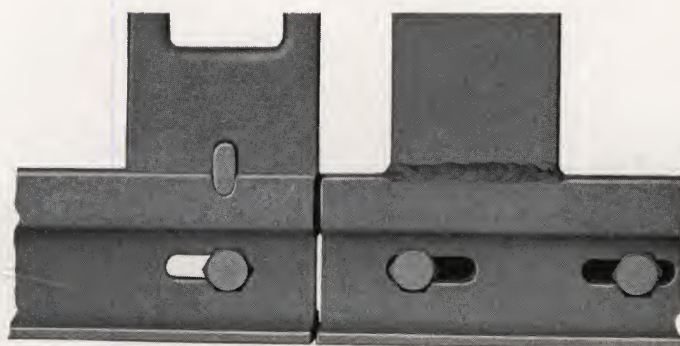
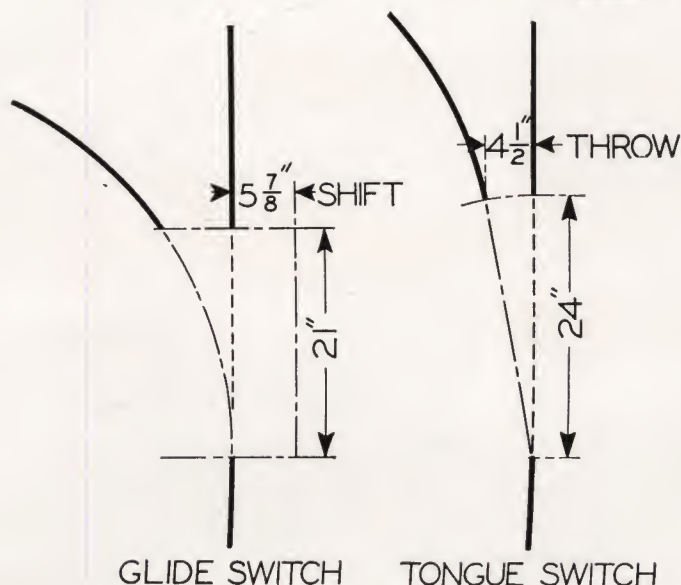
## SPECIAL MONORAIL SWITCHES

With standard switch parts American MonoRail engineers are able to develop special equipment to meet the unusual switching requirements of practically any track layout. On page 243 will be found various arrangements that permit special transfer of carriers. Such equipment, being fabricated from standard parts, can be furnished at low initial cost.

## TRACK LOCKING LUG

This special feature consists of a lug forged as an integral part of the supporting hanger which is clamped inside the rail. The lug fits into a special notch cut into the head of the rail. The positive lock thus obtained prevents the connecting track from crowding into and interfering with the moving switch section. It thus assures free operation of the switch and smooth travel of trolleys over track joints.

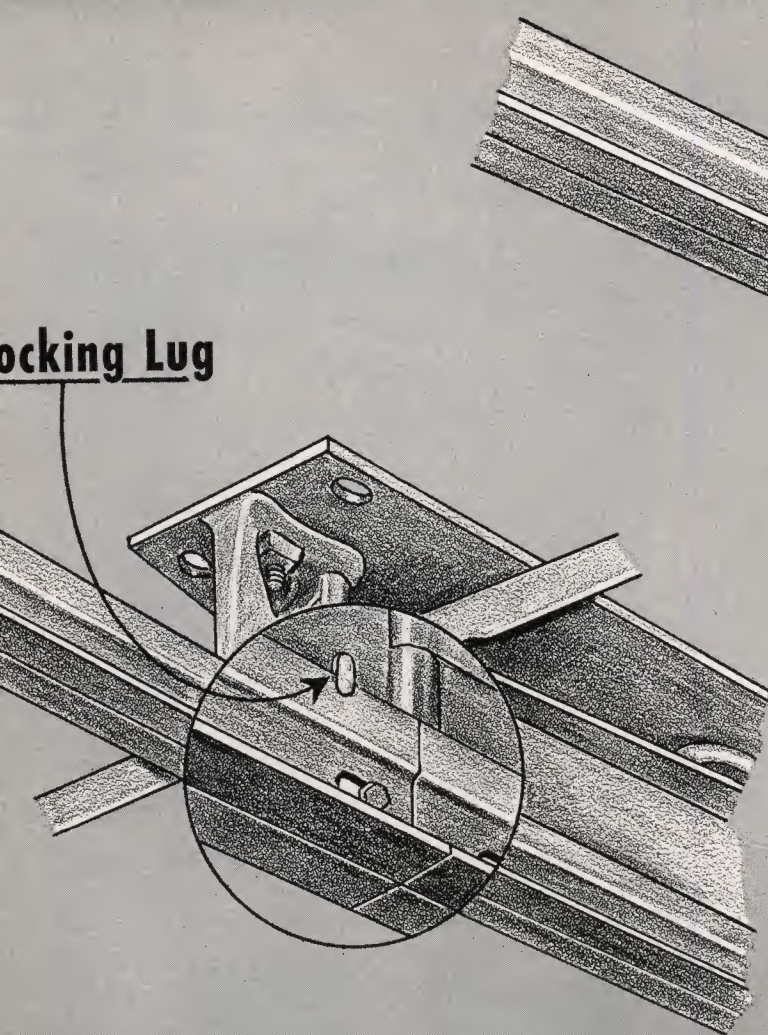
Similar rail locking lugs are applied to tracks connecting with cranes, turntables, elevators, dipping machines and scale sections.



STANDARD LOCKING LUG AND NOTCH.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





A technical drawing showing a close-up of a locking lug assembly. A line points from the text 'Locking Lug' to a circular inset that magnifies a specific part of the assembly, showing a pin or bolt passing through a hole in a metal plate.

**Locking Lug**



A technical drawing showing a side view of a rugged construction. It depicts a heavy steel plate with a drop-forged hanger mounted on it, supporting a track. The drawing highlights the solid, welded nature of the assembly.

**Rugged Construction**

# AMERICAN MONORAIL Switch Advantages

## Rugged Construction

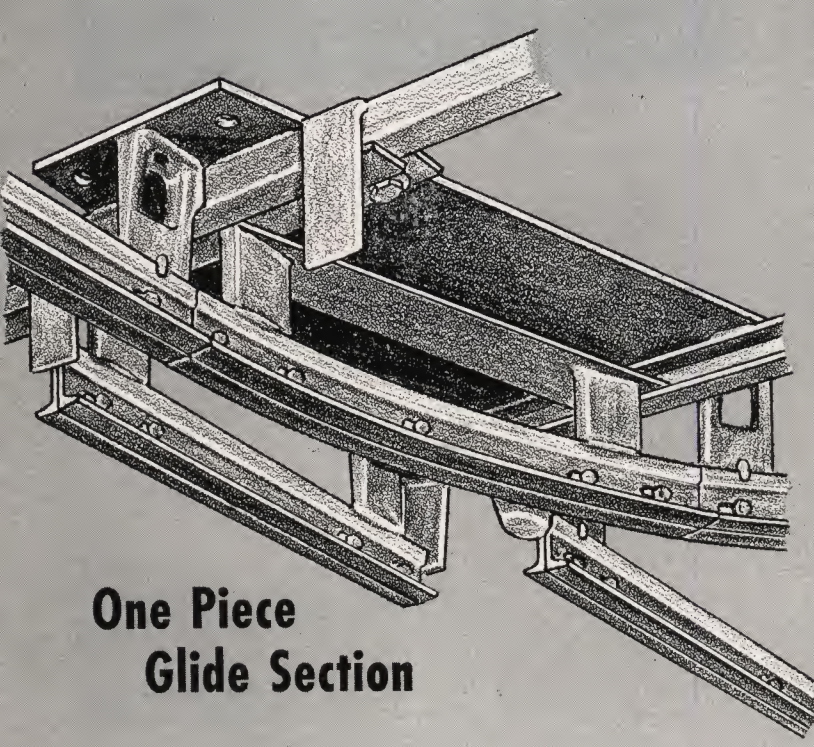
On a heavy steel plate, drop-forged hangers are mounted for support of switch tongue and connecting track ends. This exclusive method of assembly produces a compact and rugged switch, as solid and as rigid as the supporting structure, offering accurate alignment of track with perfect safety at all times.

## Locking Lug

Another exclusive feature is the Locking Lug, an integral part of the drop-forged hanger. This lug fits into a notch in the head of the connecting track to prevent crowding or creeping of the track. It thereby assures free operation of the switch and smooth travel of trolley wheels over track joints.

## One Piece Glide Section

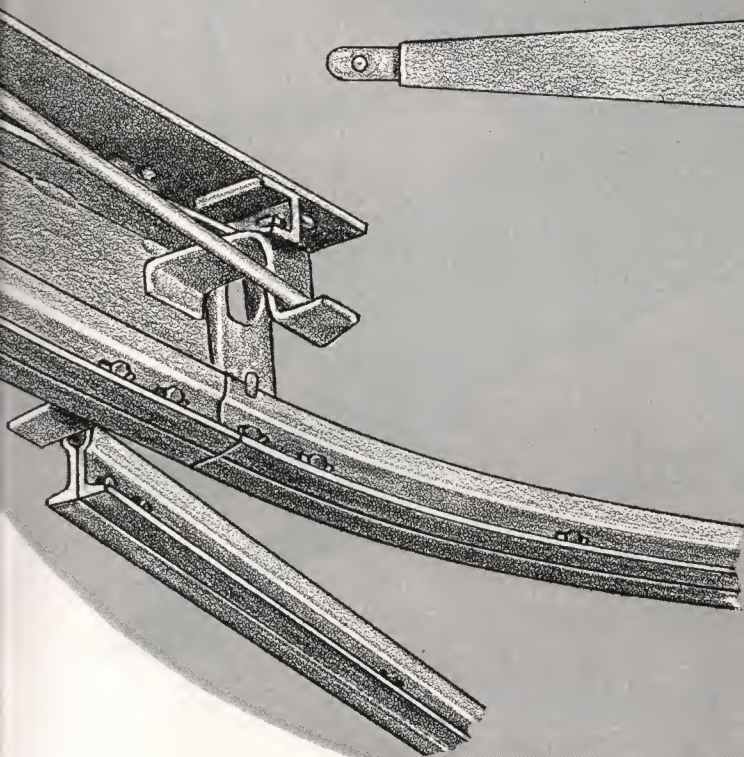
A jig welded assembly of drop forged hangers on heavy steel plate forms the one piece section of all glide type switches. This compact design greatly increases the flexibility of the American MonoRail system. Glide switches furnish smooth, accurate transfer of trolley travel with but a slight pull on the rope.



A technical drawing showing a perspective view of a one piece glide section. It illustrates the entire assembly, including the heavy steel plate, drop-forged hangers, and the connecting track, all welded together into a single unit.

**One Piece  
Glide Section**





## Positive Latch

### Positive Latch

When the switch is thrown, it locks automatically in each position and registers accurately for passage of trolleys. This feature is particularly important in 3-way switches since it would be difficult to register on the middle track without a positive stop in this position.

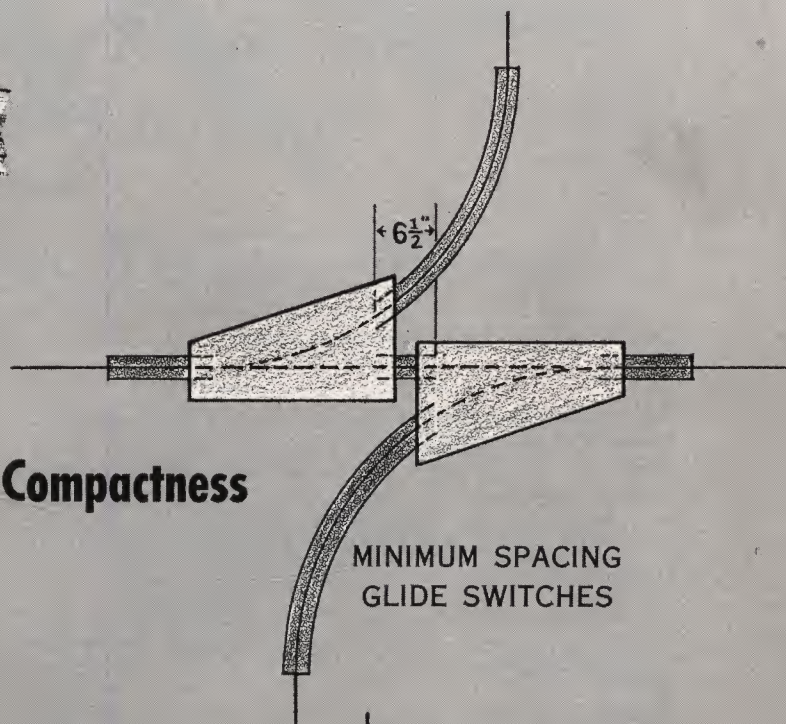
### Compactness

Compact design reduces necessary clearances and overall dimensions of switches and turntables. It permits the use of shorter curves with ample room for trolleys in close quarters, so that systems can be designed for service within extreme space limitations.

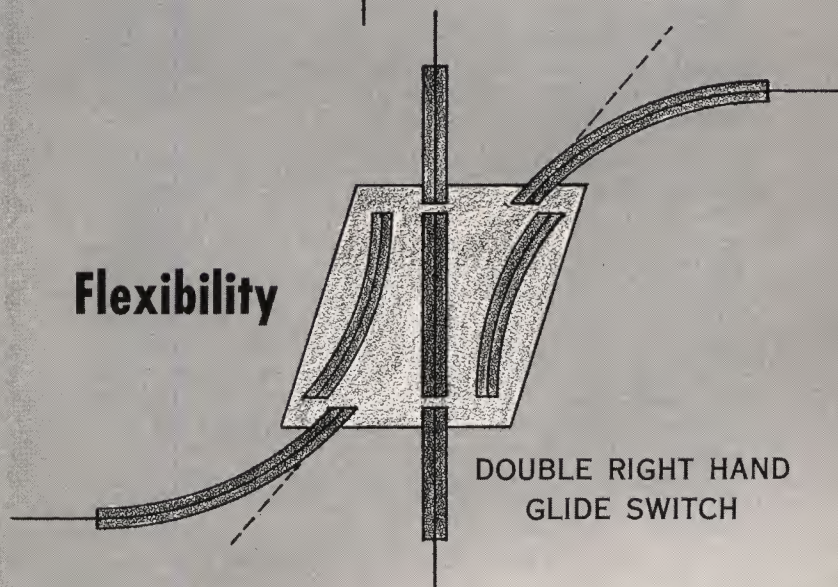
### Flexibility

By assembling standard parts on heavy plate, special switching arrangements can be designed to meet unusual problems. This feature of flexibility makes possible the application of tailor-made handling systems without exorbitant extra cost.

## Compactness



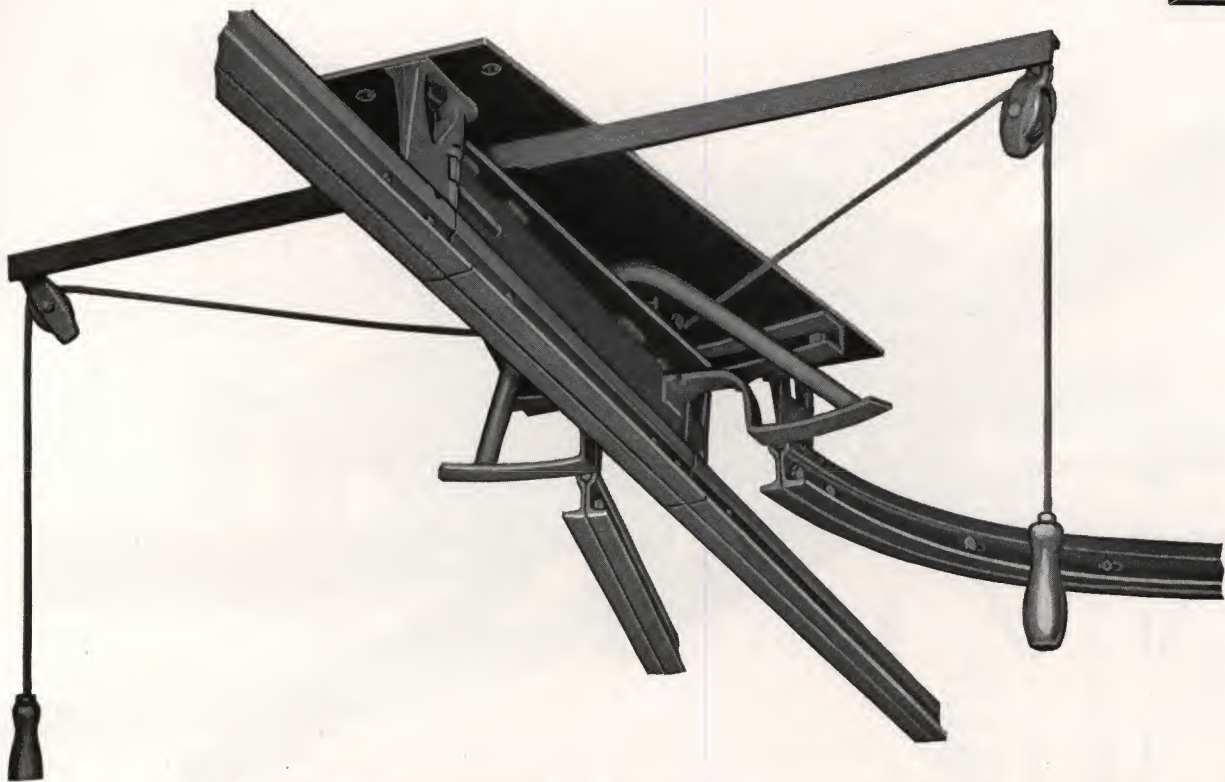
## Flexibility











## No. 261 Three-Way Tongue Switch

### SPECIFICATIONS

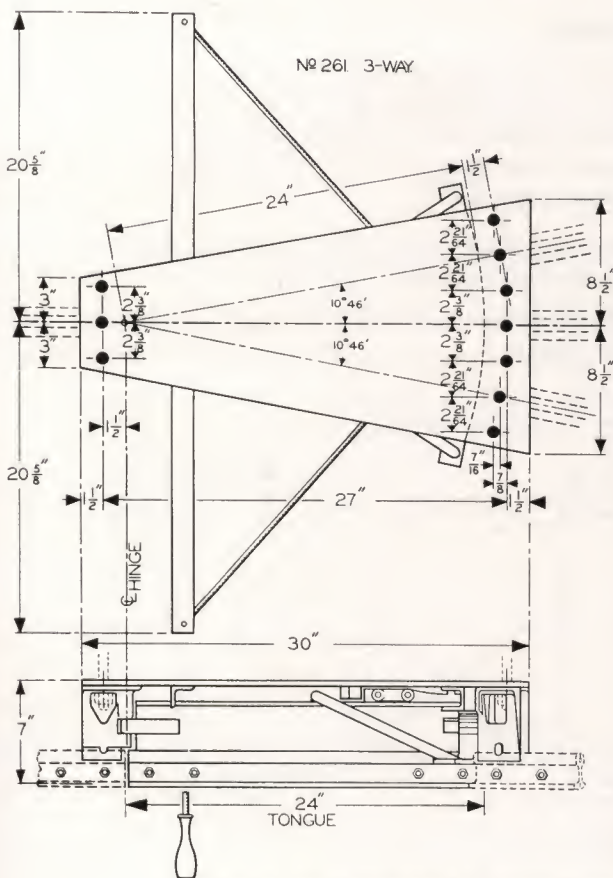
**Track Supports:** Drop forgings.  
Mounted on  $\frac{3}{8}$ " steel plate.  
All nuts secured with lock washers.  
Accurate register between switch tongue and connecting track.  
Positive latch.  
Safety stops guard all open rails.  
**Switch Ropes:** Heavy sash cord.  
**Rope Pulleys:** Malleable iron.  
**Pulley Supports:** Heavy angle iron.  
**Finish:** Green Enamel.  
**Weight:** 80 pounds.

The MonoRail three-way switch illustrated above embodies all the design, construction and safety characteristics of the two-way switch described on page 58. Attention is especially called to the latching feature in the three-way switch. The switch tongue is shown in latched position with the middle meeting rail. When the switch tongue is moved from the right or left hand rail to the center position it latches positively in the intermediate position requiring another pull on the rope to release the latch and move the tongue to the desired position.

This positive stop in the middle position is an important feature since it would be difficult to spot the switch arm for the intermediate track if it could be pulled directly through that position.

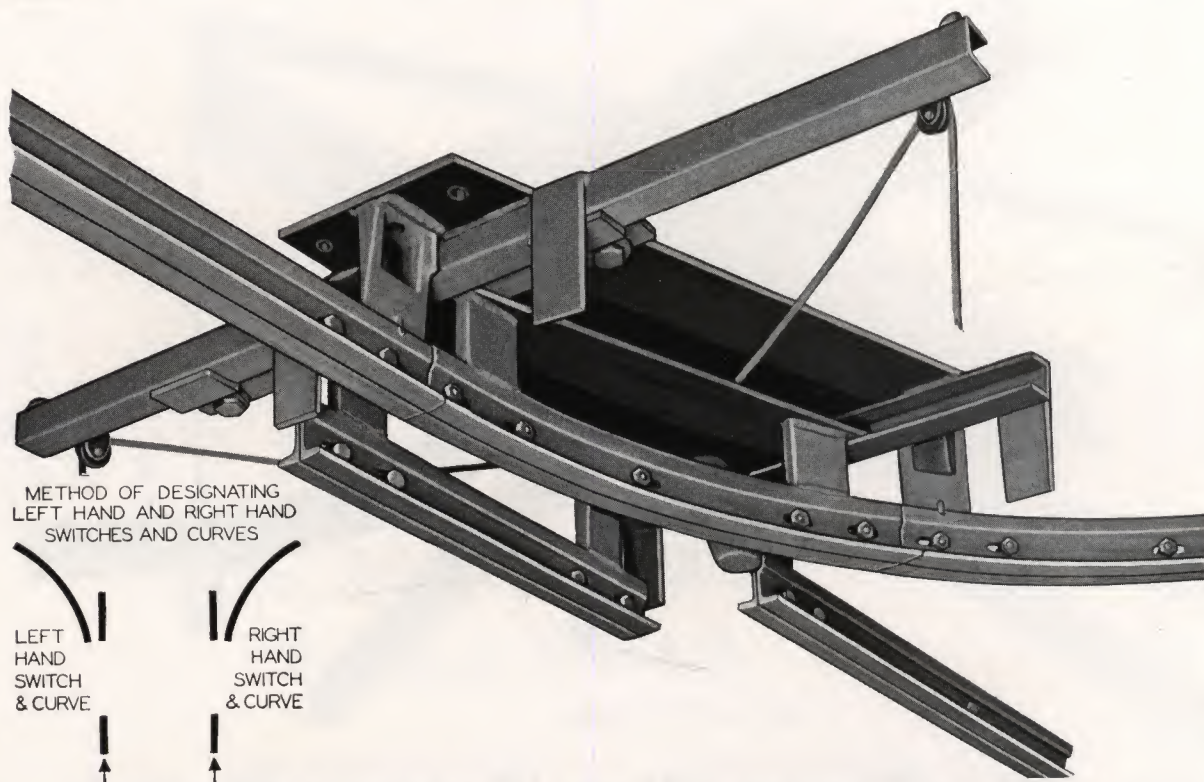
The protection afforded to open tracks is plainly shown in the illustration above. Safety stops, attached to switch tongue, provide positive insurance against trolleys leaving track at switches.

Give distance from floor to rail for proper switch rope length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 293 Two-Way Glide Switch

### SPECIFICATIONS

**Track Supports:** Drop forgings.  
All nuts secured with lock washers.  
Accurate register between shift section and connecting track.  
Positive latch.  
Safety stops guard all open rails.

**Switch Ropes:** Heavy sash cord.  
**Rope Pulleys:** Malleable iron.  
**Pulley Supports:** Heavy angle iron.  
**Finish:** Green Enamel.  
**Weight:** 110 pounds.

Greatly increased flexibility for the American Mono-Rail System has been gained by the development of the glide type switch, as by its use, branch tracks with a spacing of only two feet, three inches are secured. For examples of possible close clearances obtained by the use of glide type switches, see diagrams on page 242. Trolleys travel easily and smoothly through the curved section of glide type switches.

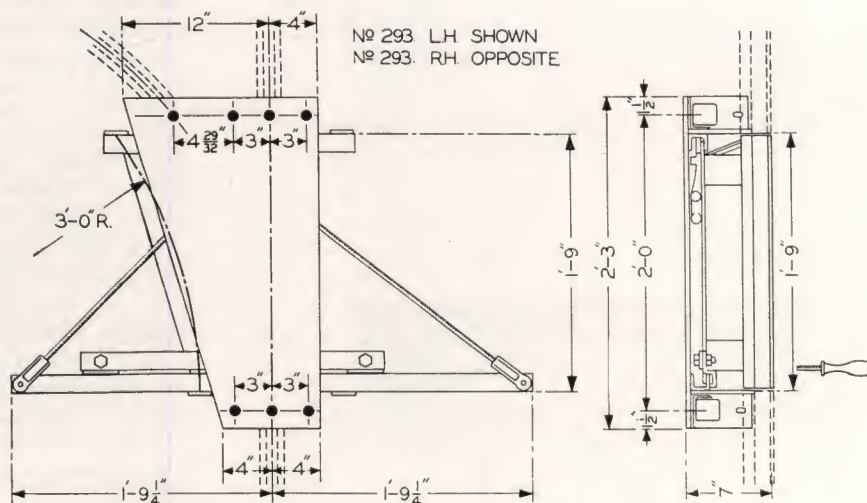
A slight pull on the switch rope moves the switch to either position, where a positive latch holds it in place for the passage of trolleys.

All open tracks are guarded by safety stops so that it is impossible for trolleys to leave the track.

Crowding and interference with

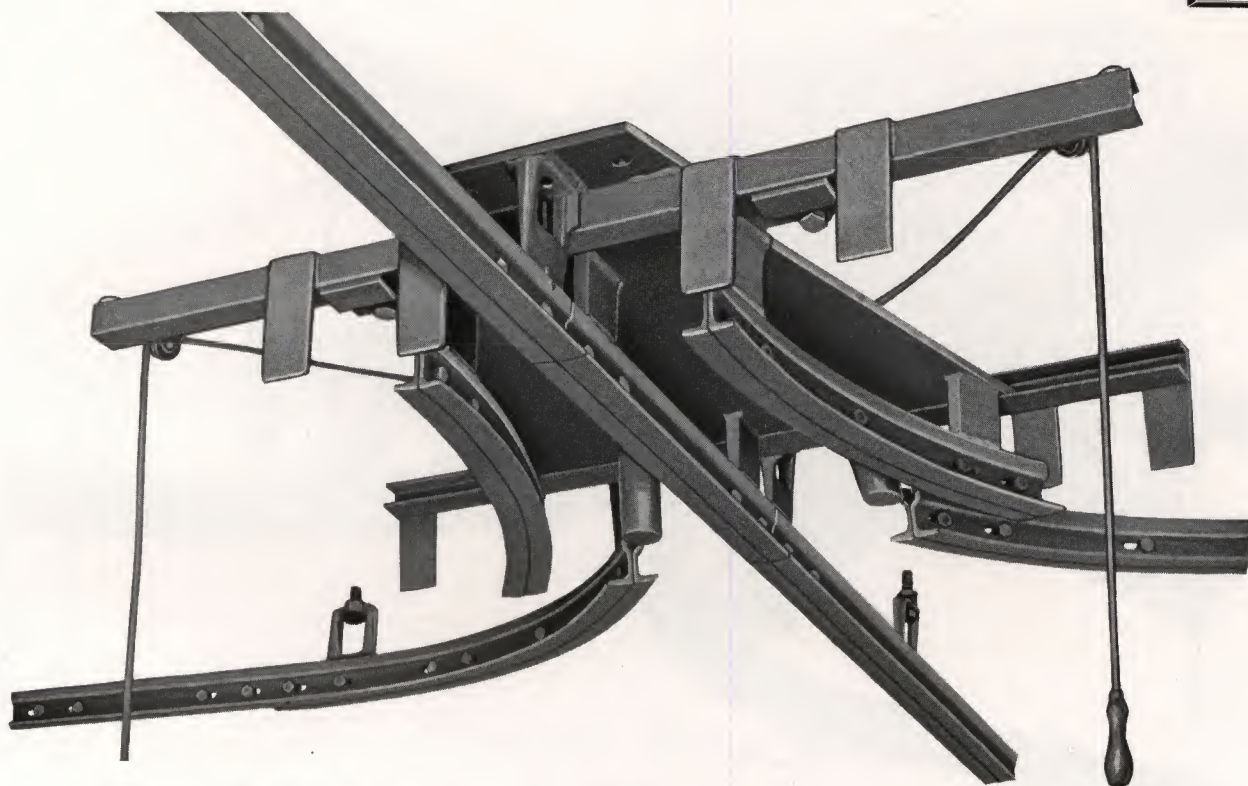
shift section by connecting track is prevented by self-locking lugs on track supports.

Give distance from floor to rail for proper switch rope length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 294 Three-Way Glide Switch

### SPECIFICATIONS

**Track Supports:** Drop forgings.  
All nuts secured with lock washers.  
Accurate register between shift section and connecting track.  
Positive latch.  
Safety stops guard all open rails.

**Switch Ropes:** Heavy sash cord.  
**Rope Pulleys:** Malleable iron.  
**Pulley Supports:** Heavy angle iron.  
**Finish:** Green Enamel.  
**Weight:** 158 pounds.

The jig-welded assembly of glide switch parts assures level joints at track junctions. Each switch is thoroughly inspected for track register before shipment.

Approaching tracks are prevented from crowding the

glide section by lugs in the drop forged track supports.

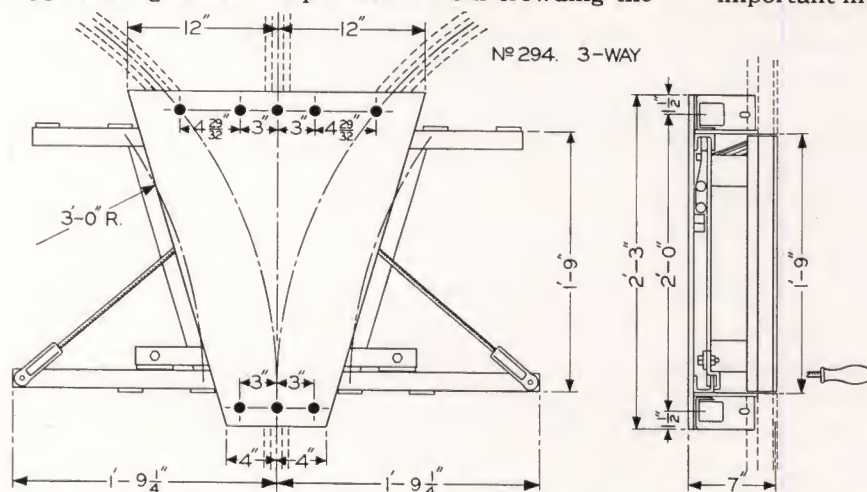
A positive latch holds switch in any position until released by a pull on switch rope. This is especially important in shifting to the intermediate position since

the switch latches at this point requiring another pull on the rope to shift to other positions.

All open tracks are protected by safety stops. Trolleys cannot leave track at switches.

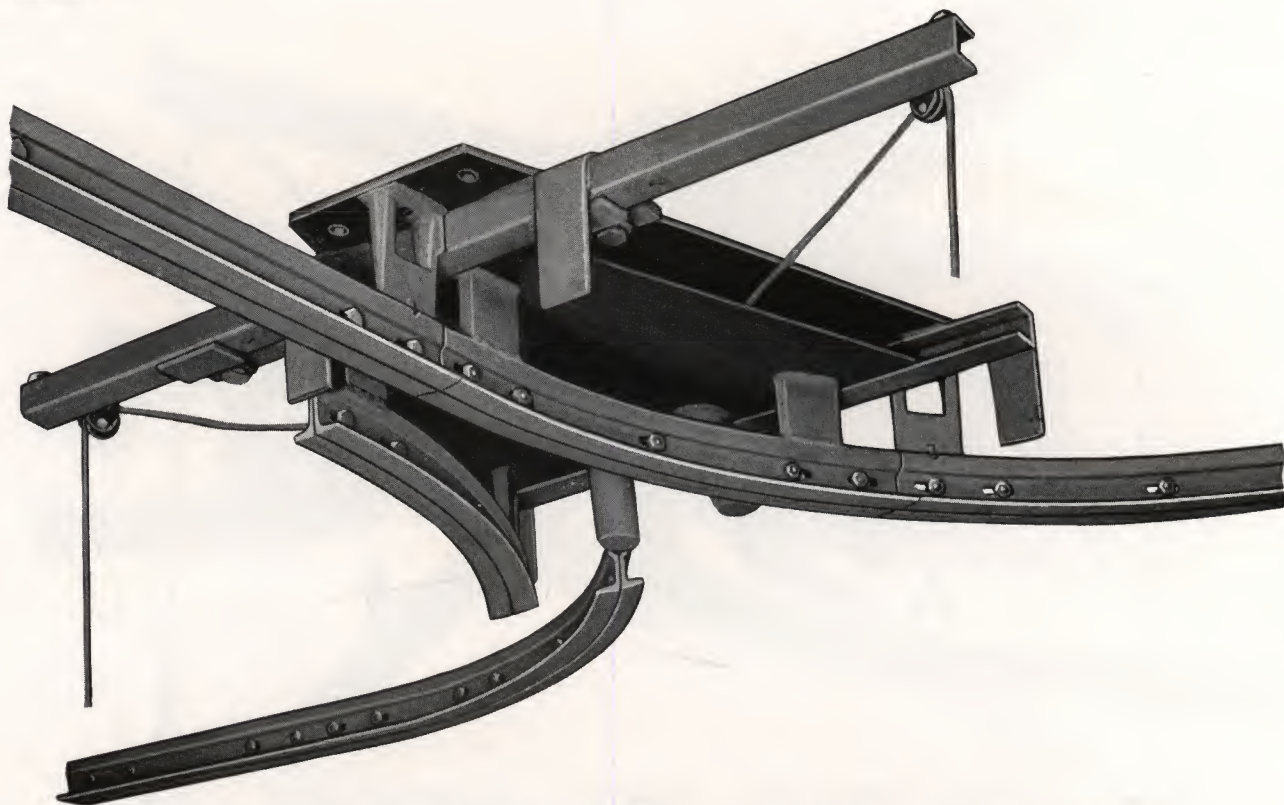
MonoRail switches of the Glide Type add greatly to the adaptability and flexibility of MonoRail Systems where close spacing of branch tracks is desirable.

Give distance from floor to rail for proper switch rope length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 295 Glide Type Wye Switch

### SPECIFICATIONS

**Track Supports:** Drop forgings.  
All nuts secured with lock washers.  
Accurate register between shift section and connecting track.  
Positive latch.  
Safety stops guard all open rails.

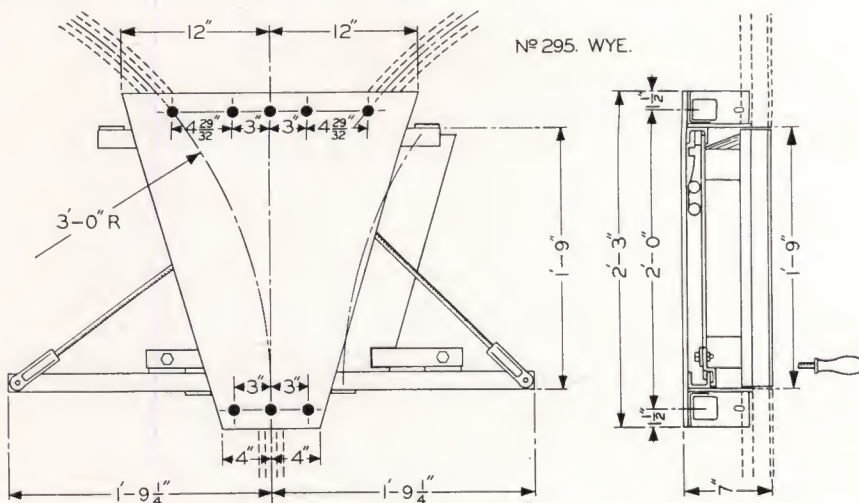
**Switch Ropes:** Heavy sash cord.  
**Rope Pulleys:** Malleable iron.  
**Pulley Supports:** Heavy angle iron.  
**Finish:** Green Enamel.  
**Weight:** 140 pounds.

The Wye Switch furnishes connection with diverging lines on either side of the center line of the switch.

Give distance from floor to rail for proper switch rope length.

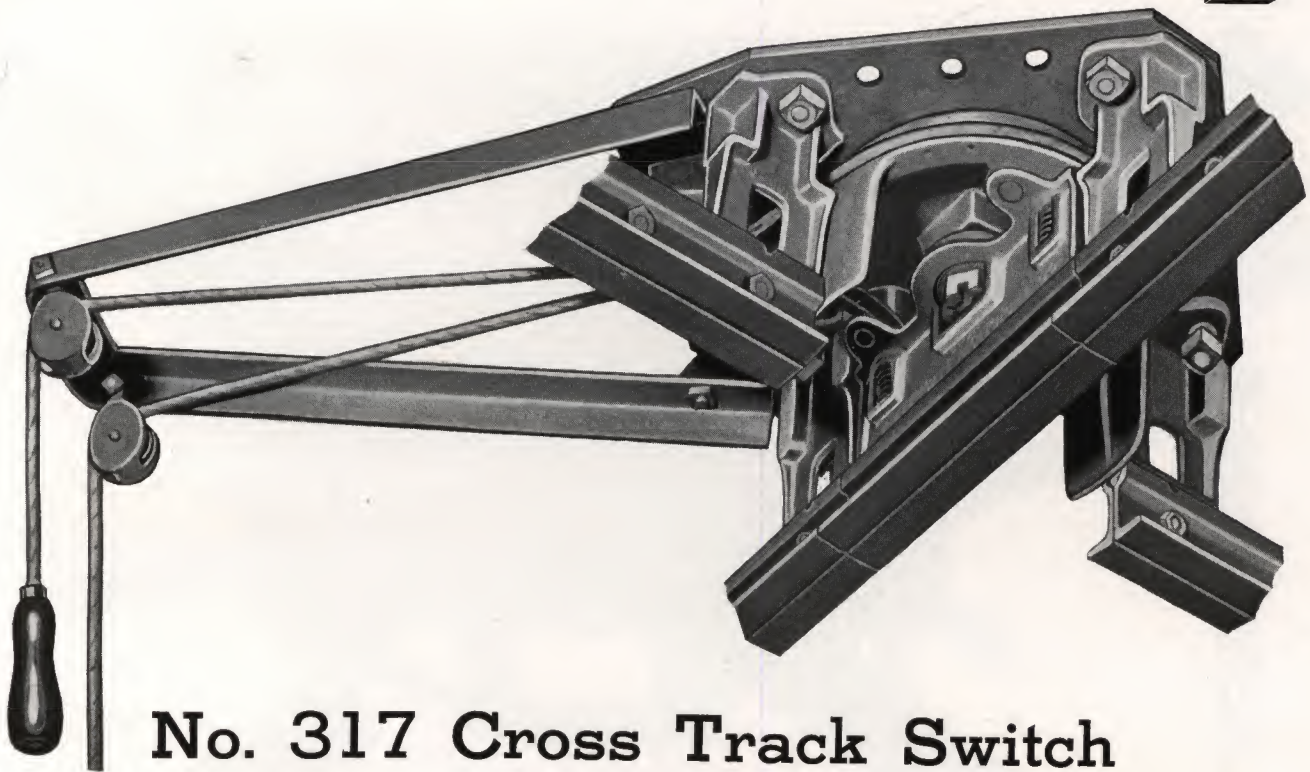
It embodies all the advantages of the Glide Type Switch—ease of manipulation, smooth curves for trolley travel, perfect register of shift section with connecting tracks, and provision against crowding by outside track.

Positive latching in both operating positions, and safety stops always guarding all open track are safety features.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 317 Cross Track Switch

### SPECIFICATIONS

Beam accommodates two-wheel trolleys only.  
**Operating Parts:** Malleable iron.  
 Parts mounted on heavy malleable plate.  
 Swing beam carried on roller thrust bearings.  
 All nuts secured with lock washers.

Heavy circular guard protects open tracks.  
 Approaching tracks locked to prevent crowding.  
**Pull Rope:** Heavy sash cord.  
**Finish:** Green Enamel.  
**Weight:** 55 pounds.

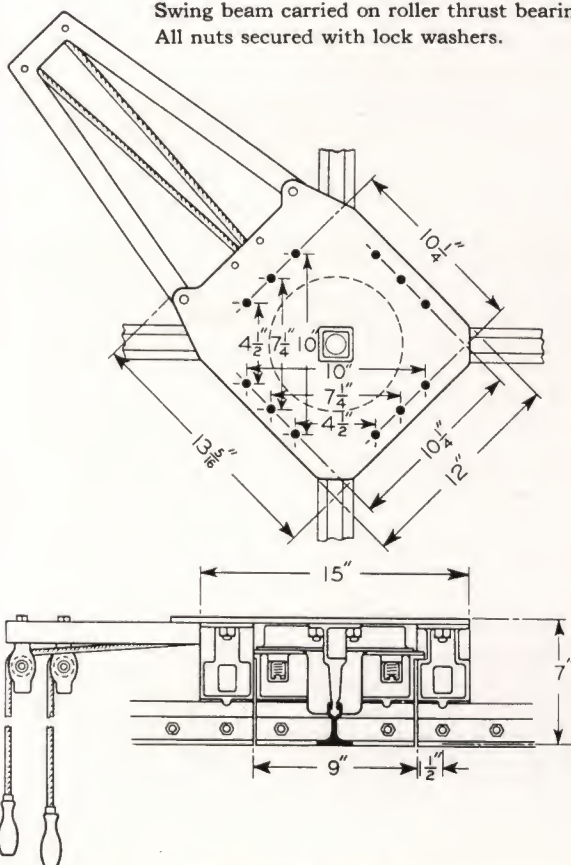
Where it is necessary for two lines of MonoRail to cross at right angles, the cross track switch illustrated above provides for through travel in either direction or for shifting from one track to the other.

These cross track switches may be used as turntables and grouped to operate in pairs or in batteries of four for special service. By means of the cross track switch special long load bars with a two-wheel trolley at each end can be switched from a straightaway line of travel in a single track to cross operation on parallel tracks.

Loaded two-wheel trolleys can be run onto the cross track switches or turntables and the latter operated without changing the position of the load. The shifting or revolving section of the cross track switch is carried on roller thrust bearings and operates easily even under load. Latching with either track is positive and secure.

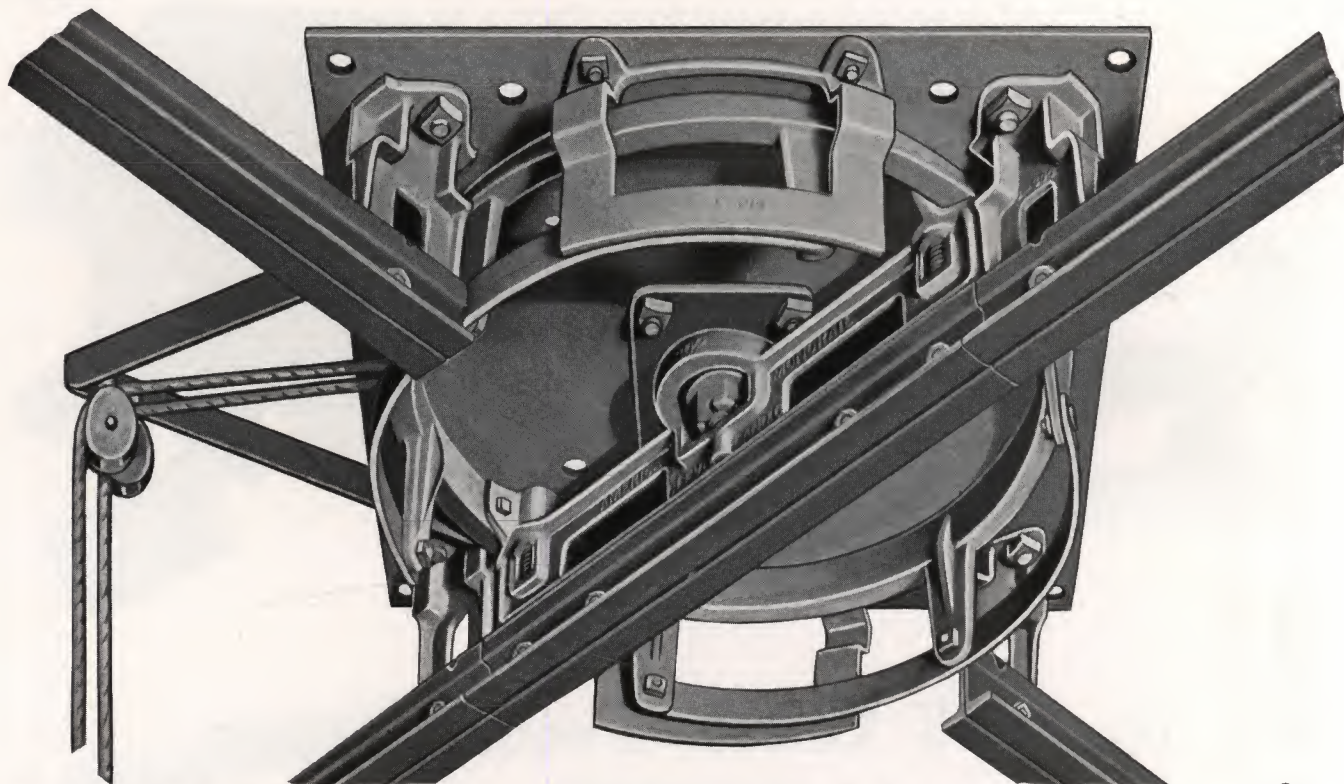
Trolleys cannot possibly leave the track on a cross track switch as open rail ends are automatically guarded. Smooth operation over cross track switches is secured by positive alignment between track and switch section.

Give distance from floor to rail for proper switch rope length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 308 Standard Turntable

### SPECIFICATIONS

Beam accommodates all two-wheel trolleys and 4-wheel trolleys No. 142, 146, 147, 162 and 165 only.

**Operating Parts:** Malleable iron.

Parts mounted on  $\frac{5}{16}$ " steel plate.

Swing bar carried on roller thrust bearings.

All nuts secured with lock washers.

**Pull Ropes:** Heavy sash cord.

All open rail ends automatically guarded.

Approaching tracks locked to prevent crowding.

Depression in rail flange spots trolley in position.

**Finish:** Green Enamel

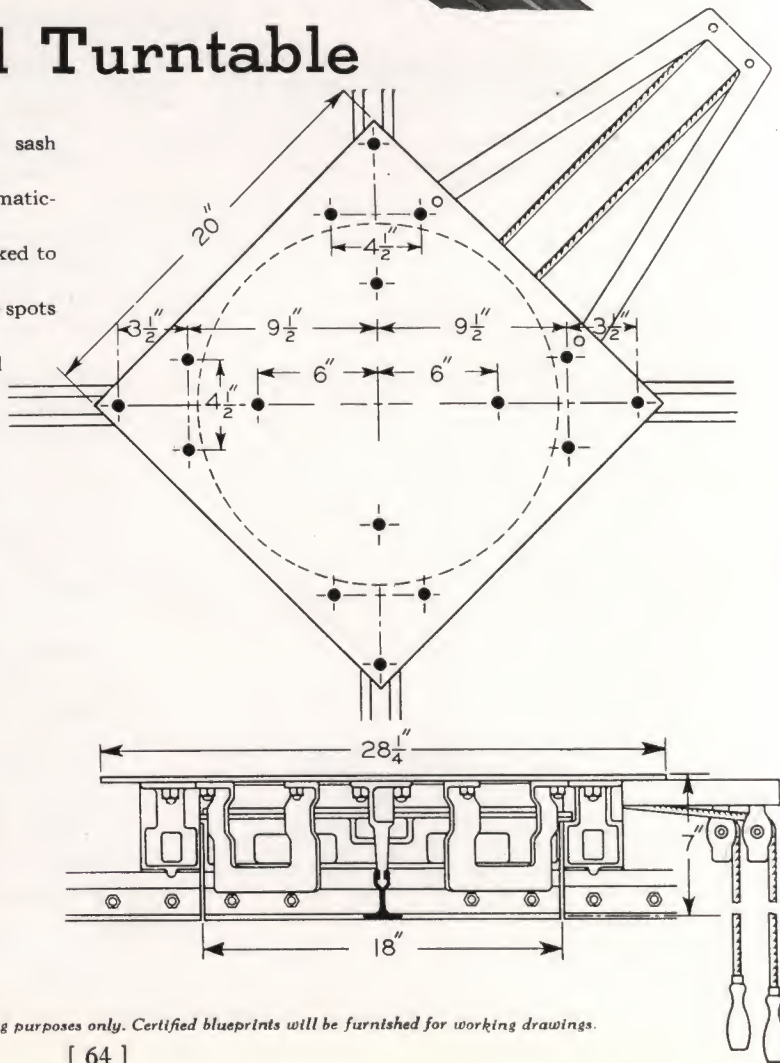
**Weight:** 74 pounds.

In laying out MonoRail to fit a given situation the track itself can be formed into very short radius curves, and by incorporating switches, cross track switches, and turntables in the system it is possible to secure any desired line of travel for the trolley.

Where a direct right angle turn is desired, or where conditions are so crowded that the placing of a switch is impractical, turntables are used to secure the change in direction of travel.

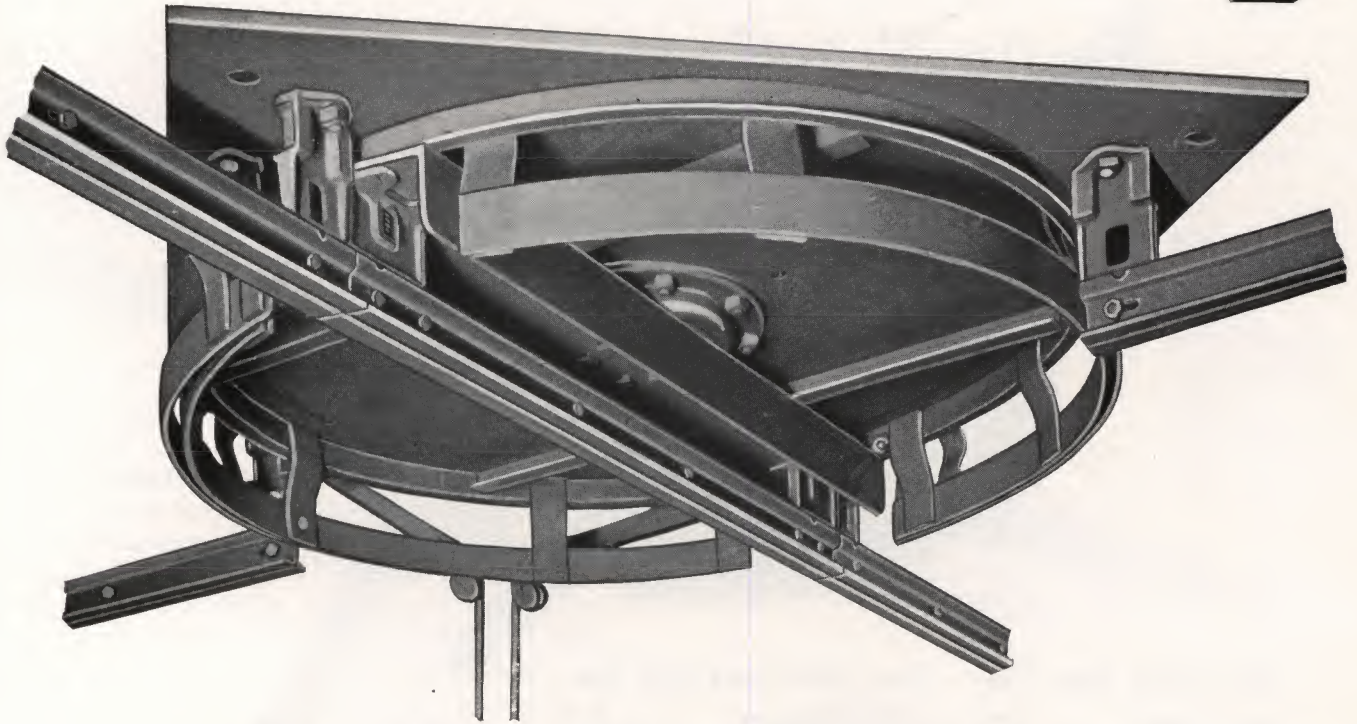
The shifting or revolving member, supported on thrust roller bearings, operates easily and smoothly while carrying loaded trolley. If a swivel is provided between the trolley and load, the turntable can be operated without changing the position of the load.

Give distance from floor to rail for proper switch rope length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 389 Giant Turntable

### SPECIFICATIONS

Beam accommodates all 4-wheel trolleys and 8-wheel trolleys, Nos. 126, 127, 171 and 175 only.

**Operating Parts:** Malleable iron.

Parts mounted on  $\frac{1}{2}$ " steel plate, 42" x 42".

Standard Rotation 90°

Swing bar carried on ball bearings.

Open rail ends automatically guarded.

Approaching tracks locked to prevent crowding.

**Pull Ropes:** Heavy sash cord.

**Finish:** Green Enamel.

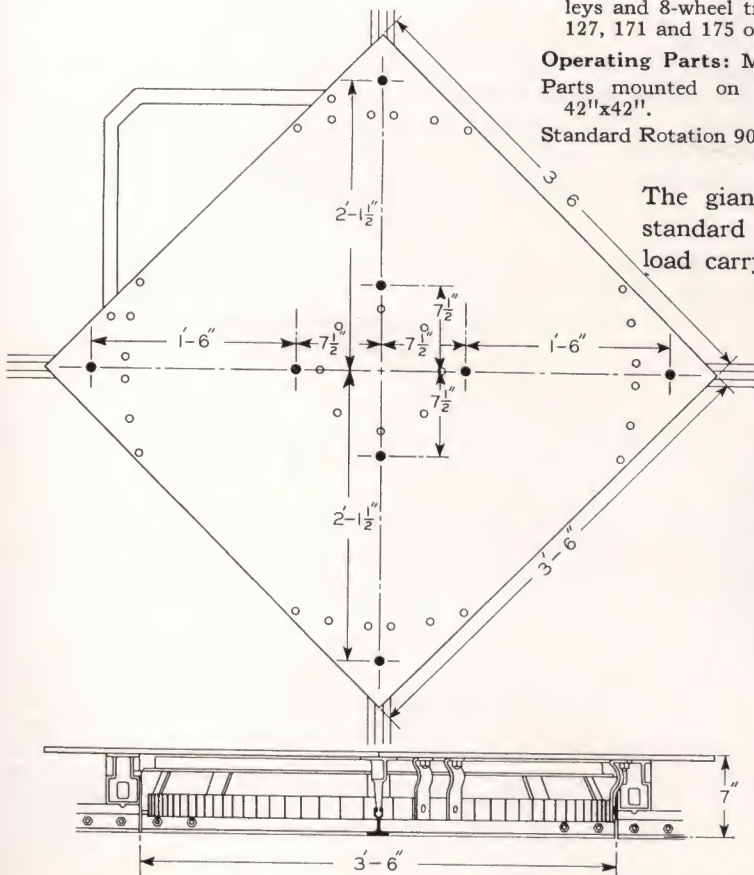
**Weight:** 425 pounds.

The giant turntable is built larger and heavier than the standard turntable for longer trolley clearance and greater load carrying capacity.

The swing bar, supported on ball bearings, operates easily under capacity loads and registers in exact alignment with connecting tracks. Ends of bar are supported on a shelf at registering points, preventing deflection when loads pass through turntable.

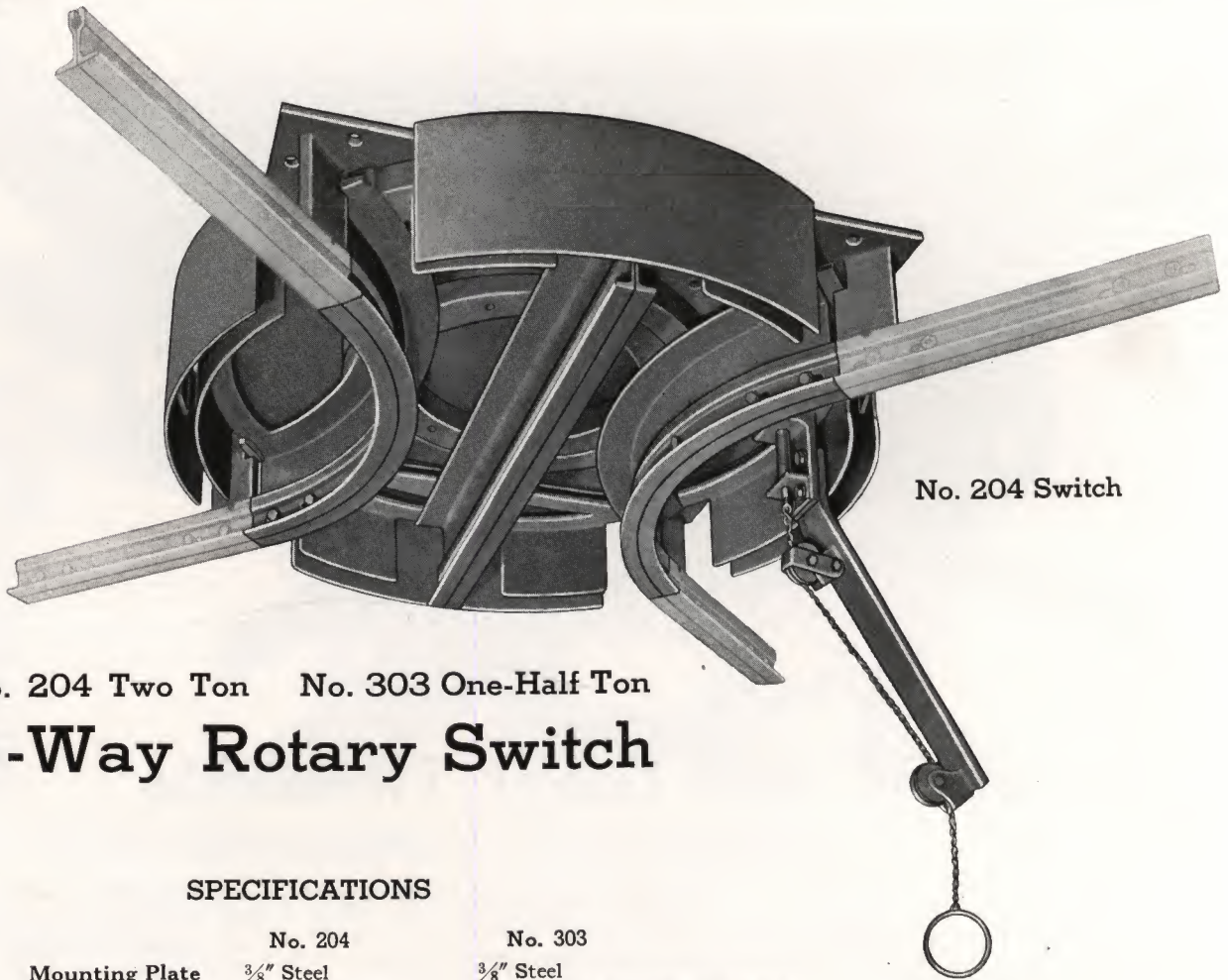
Safety guards prevent trolleys from leaving all open track ends. Track is locked against creepage by lugs on all supporting brackets. A depression in the flange of rail on turntable spots trolleys in position.

For loads exceeding one ton, see No. 204 Two Ton Rotary Switch on page 66. Special turntable can be furnished for track approaching at various angles or incorporating curved sections to meet complicated switching requirements. Use of standard parts keeps initial cost of such special arrangements reasonably low.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 204 Two Ton    No. 303 One-Half Ton 3-Way Rotary Switch

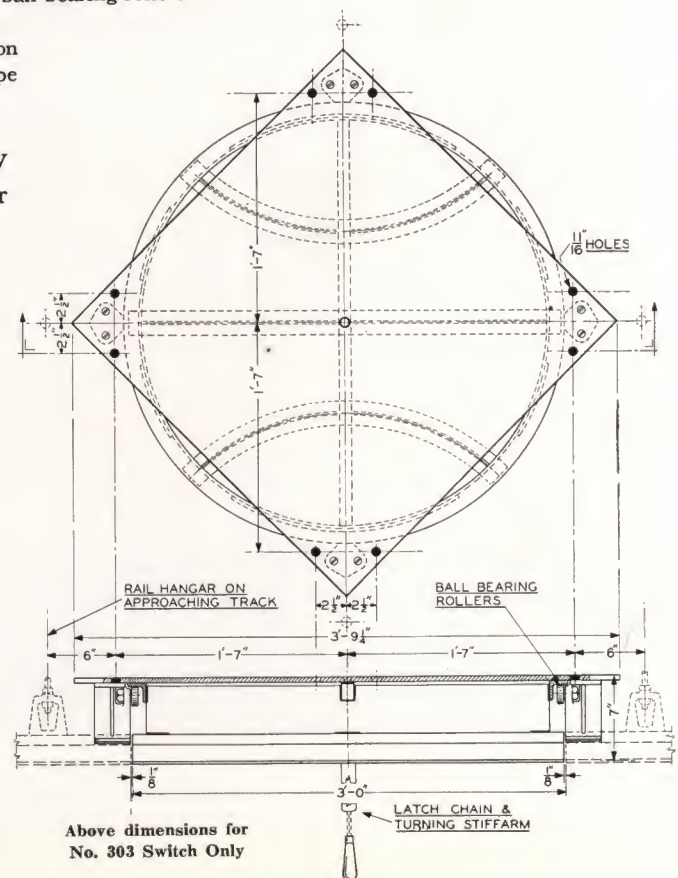
### SPECIFICATIONS

	No. 204	No. 303
Mounting Plate	$\frac{3}{8}$ " Steel	$\frac{3}{8}$ " Steel
Rotary Section	18" Ball Races	$\frac{5}{16}$ " Ring on ball-bearing rollers
Safety Guards	$\frac{3}{16}$ " Steel	$\frac{3}{16}$ " Steel
Track Hangers	Heavy Steel	Malleable Iron
Operating Chain	Machine Type	Machine Type

For an extremely compact track arrangement, this rotary switch permits direct passage of trolleys to the right, left or straight ahead from any approach when tracks cross at right angles. It can be used to eliminate switch groups 5L, 4L, EL and GL shown on pages 236 to 239.

In the dimension drawing of No. 303 Switch, note that forged hangers are specified for auxiliary support. These hangers should be placed in the approaching tracks 6" from the malleable hangers in the switch.

No. 204 switch can be modified for electrified systems but will not accommodate MonoTractor travel. It can also be used as a turntable for No. 126 and No. 127 8-wheel trolleys. Certified dimension drawings will be furnished on request.





# American MonoRail Trolleys

Successful operation of an overhead handling system depends largely on the parts that move. In designing American MonoRail Trolleys, the important factors of strength and ease of propulsion were given first consideration.

## THE WHEELS

To provide adequate strength the wheels on all the trolleys are drop forged and all but No. 123 have flame hardened treads. They will stand up for years under the heaviest and severest kind of service.

To insure easy rolling and trouble-free service, wheels are mounted on New Departure precision ball bearings of the highest grade automobile type, carried on steel axles. Bearings are seated with a press fit into a recess in the wheel forging with close tolerances, and retained by steel washers rolled in. This insures perfect alignment. The tread of the wheel forging is machined for proper bearing on rail flange and to insure concentricity with the bearings.

The ball-bearing assembly in both the No. 164 and No. 191 wheels is practically dust-proof, oil-tight. The bearings are not affected by ordinary high temperatures or dust conditions. Lubrication of these bearings is required only at infrequent intervals.

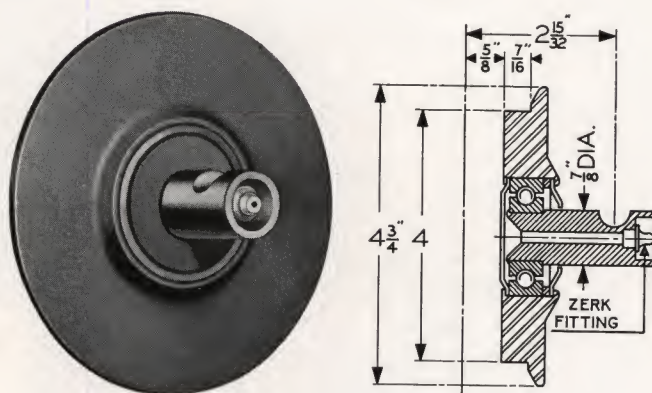
Lubrication of all American MonoRail trolley wheels is secured by pressure system through the center of the machined axles.

## OTHER ADVANTAGES

All four-wheel trolleys are equipped with bumpers so that two or more of them may be pushed along the track, one against the other, without binding the wheels.

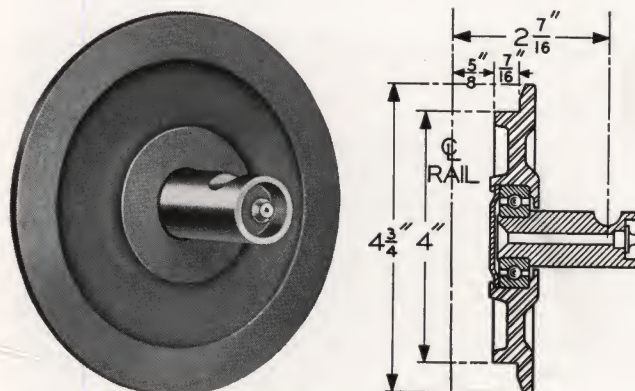
Swivel joints are carefully fitted so that trolleys operate easily and smoothly around curves with the least possible amount of friction.

Trolley wheels cannot strike or rub against MonoRail hangers, even on short radius curves.



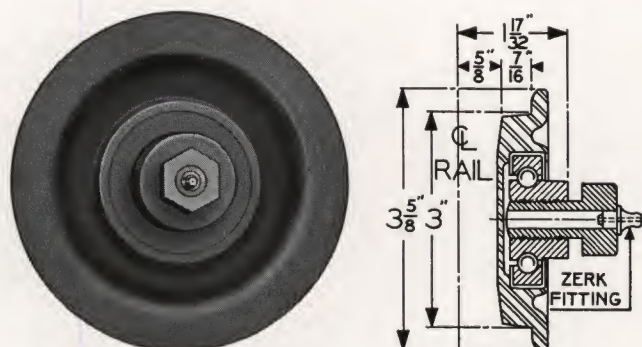
**No. 164 Trolley Wheel**

Cross section shows sturdiness of this wheel together with the seating of precision bearings and pressure lubrication.



**No. 191 Trolley Wheel**

Easy rolling of this standard duty trolley is assured through precision bearings with pressure lubrication.



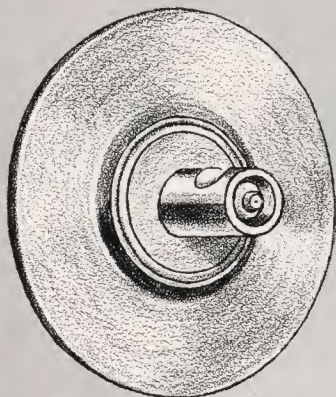
**No. 123 Trolley Wheel**

For light loads this trolley provides trouble-free movement at low initial cost. Lubrication by pressure through axle.

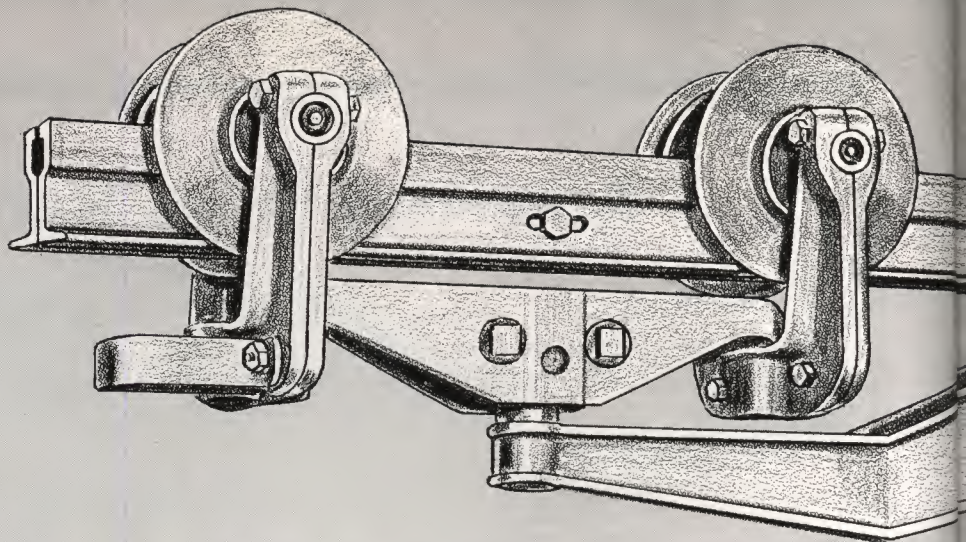
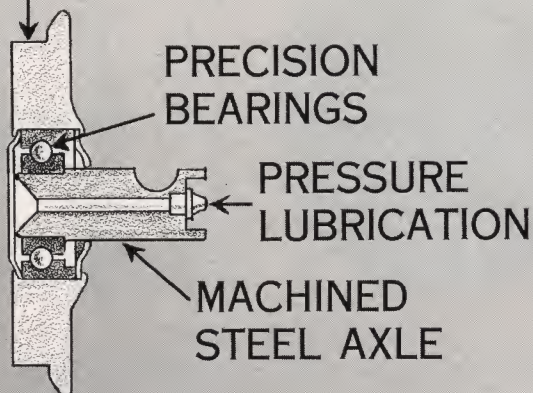
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



**FORGED WHEELS**



**HARDENED TREAD**



# AMERICAN MONORAIL

## Trolley Advantages

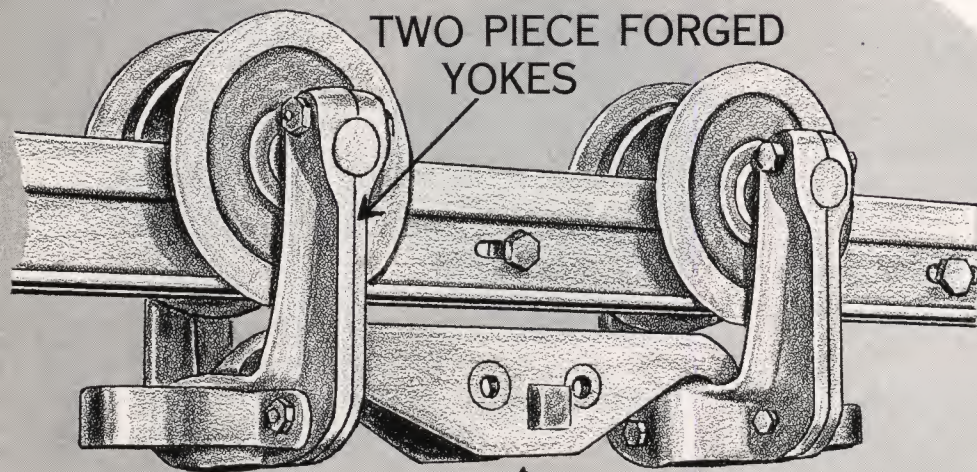
### Forged Wheels

To provide adequate strength for heavy duty handling, all trolley wheels are drop forged and, with the exception of the small light-duty trolley, all wheels have flame hardened treads so that they will stand up for years under most severe service.

### Precision Bearings

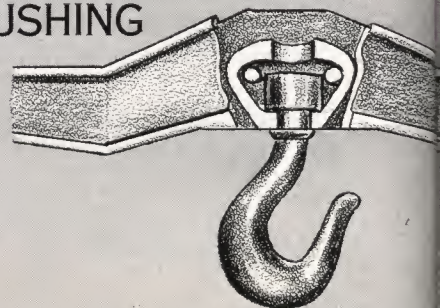
To insure easy rolling, all wheels are mounted on precision ball bearings of the highest grade automobile type. Bearings are press fit into a close tolerance recess in the wheel forging and retained by steel washers rolled in for perfect alignment.

**TWO PIECE FORGED  
YOKES**



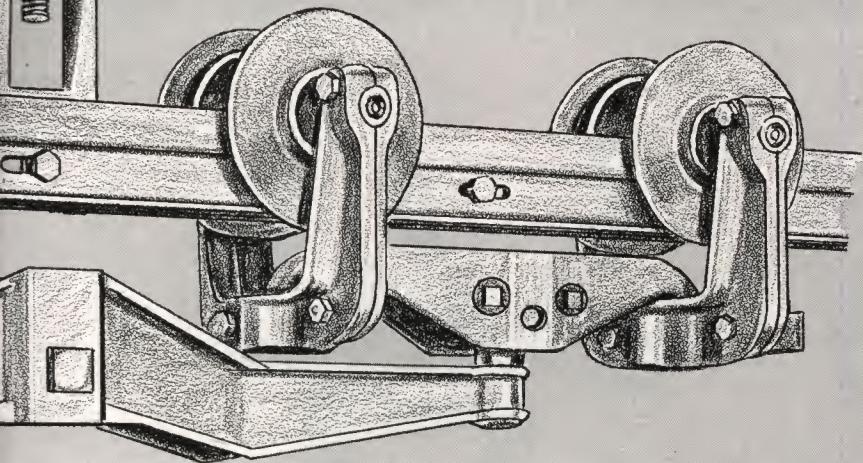
**LOW HEADROOM LOAD BAR**

**INTERNAL SWIVEL  
BUSHING**





# EASY ROLL TROLLEYS



## Pressure Lubrication

Since the bearings in both Standard and Heavy Duty Wheels are practically dust-proof and oil-tight, only occasional lubrication is required. This is secured through Zerk fittings for pressure application of lubricant to all Trolley Wheel Bearings.

## Forged Yokes

Twin forgings of compact design are clamped together to form the yoke which holds the axles in rigid position. This added strength provides lasting service while the compact design reduces bending stresses and allows extra inches of headroom. Trolley wheels find no interference at hangers even on short radius curves.

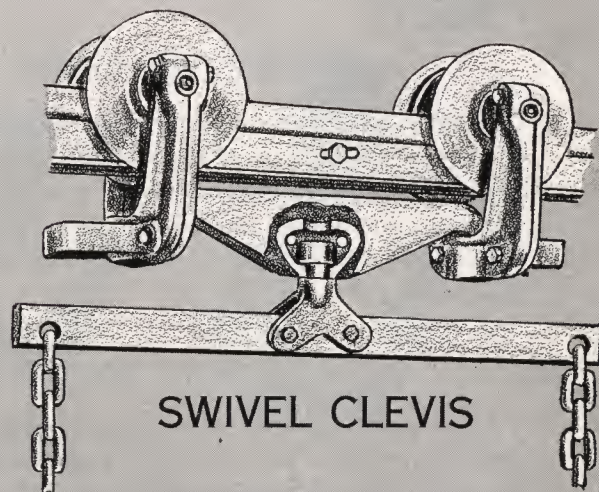
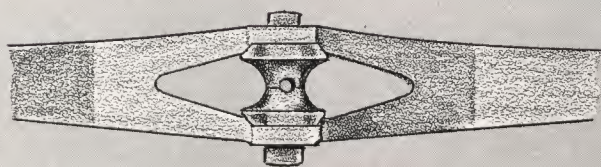
## Low Headroom Load Bar

To save headroom and at the same time gain added security, the load bars on 4-wheel trolleys ride directly under the track on the forged yokes instead of suspended beneath it. This adds considerable strength and permits free swivelling of trolleys around curves.

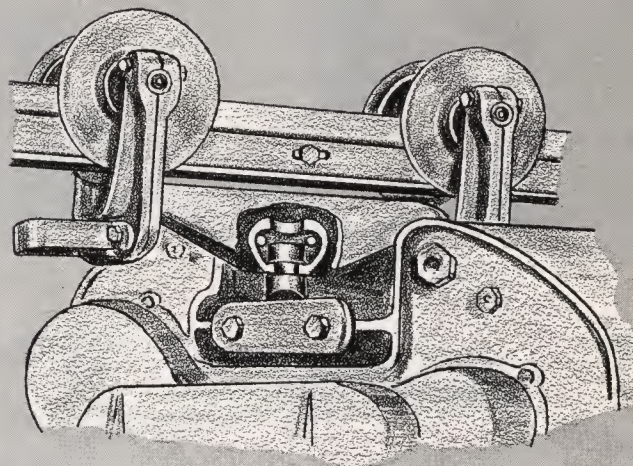
## Forged Swivel Fittings

All load suspension fittings, bushings, hooks, etc., are drop-forged for extra strength. Swivel joints are carefully fitted so that trolleys operate easily around curves with least friction.

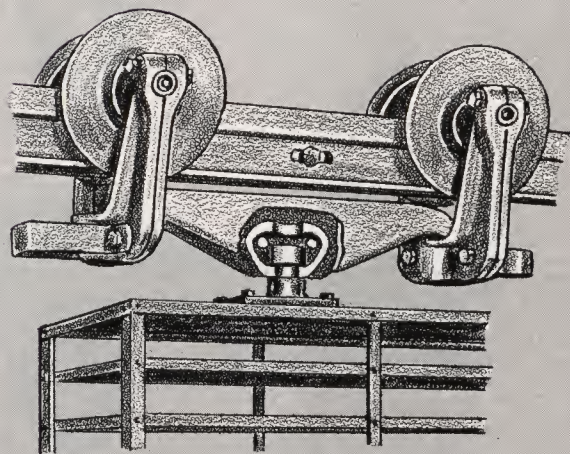
## INTERNAL HOOK BUSHING



SWIVEL CLEVIS



FORGED SWIVEL



FLANGED SWIVEL



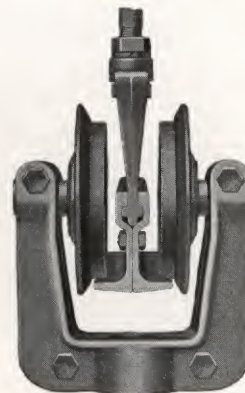
## THE TROLLEY YOKE

Great strength and lasting service are as much a part of the trolley yoke as of the wheels. In all trolleys except No. 188 and No. 189 heavy drop forgings are clamped together holding the axle in a rigid position in relation to the rail. Hexagon head machine bolts are used throughout for assembly.

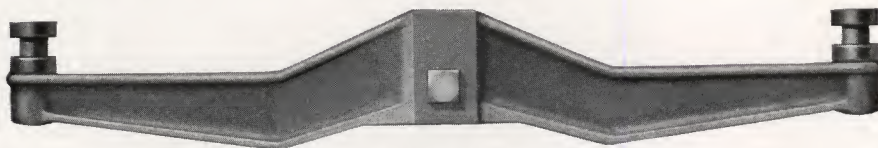
## THE LOAD BAR

To save headroom and at the same time gain added security, the load bar on a four-wheel trolley rides directly under the track, being carried on the forged yoke instead of suspended beneath it. This assembly of forgings adds a considerable factor of strength yet permits free swivelling of the trolley around curves.

Load bars for eight-wheel trolleys are alloy steel castings designed for maximum capacity.



Internal hook bearings, regularly furnished with all four and eight-wheel trolleys, carry the hoist up close to the track, conserving every possible inch of headroom.



Side view of No. 115 Load Bar.



Top view showing internal hook bearing.



No. 115 Load Bar with hook in swivel bushing. Used on Nos. 171 and 175 Trolleys.



No. 215 Load Bar with special thrust bearing. Used on No. 181 Trolley only.



No. 118 Internal Hook Bearing as assembled in load bar to the left.



No. 213 Female Swivel Bushing shown in load bar to the left.

Special fittings can be applied as shown in the bottom illustration, to meet particular requirements. In this case Timken Roller Thrust Bearings support the load hook to allow frequent and easy turning of the load.





**No. 120**

Trolley Load Hook.  
For use only on Trolleys  
No. 188 and 189.  
Weight, 8 oz.



**No. 160**

Trolley Load Hook.  
Half-ton Capacity.  
Weight, 1½ lb.



**No. 158**

Trolley Load Hook  
One-ton Capacity.  
Weight, 2 lbs.



**No. 103**

Trolley Load Hook.  
Two-ton Capacity.  
Weight, 3 lbs.



**No. 121**

Trolley Load Eye.  
For use only on Trolleys  
No. 188 and 189.  
Weight, 6 oz.



**No. 173**

Trolley Load Eye.  
Half-ton Capacity.  
Weight, 1 lb.



**No. 159**

Trolley Load Eye.  
One-ton Capacity.  
Weight, 1½ lb.



**No. 104**

Trolley Load Eye.  
Two-ton Capacity.  
Weight, 2½ lbs.

## Load Suspension Fittings

American MonoRail Trolleys can be furnished with any of the load suspension fittings illustrated on this page or by diagrams on following pages covering each type of trolley. For dimensions of fittings, see page 72.

Special trolleys, such as shown on page 210, can be made up by combining standard parts with special equipment to meet the particular requirements in handling loads on racks or other carriers of similar nature.



**No. 106**

Trolley Swivel Clevis.  
Weight, 1¼ lb.



**No. 113**

Flat Forged Swivel.  
Weight, 1¾ lb.



**No. 119**

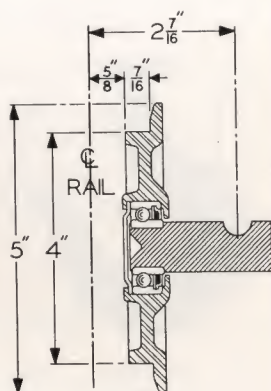
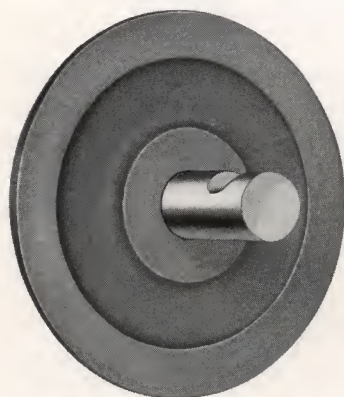
Flanged Swivel.  
Weight, 1½ lb.



**No. 144**

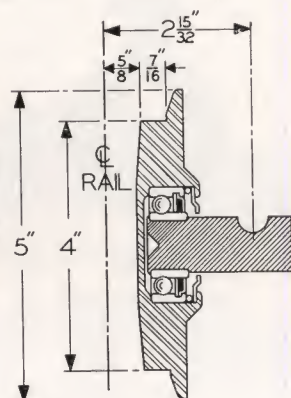
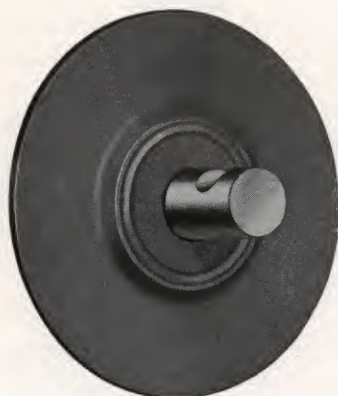
Flat Forged Swivel.  
Weight, 2 lbs.





**No. 152 Trolley Wheel**

Equipped with Oil-Seal Bearings.



**No. 192 Trolley Wheel**

Equipped with Oil-Seal Bearings.

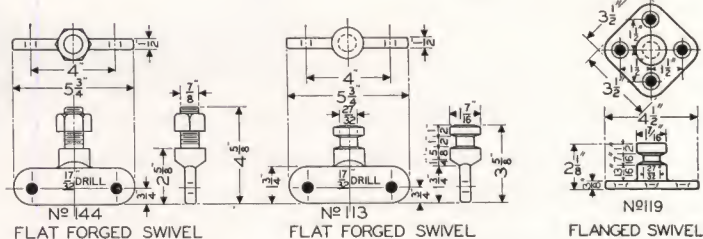
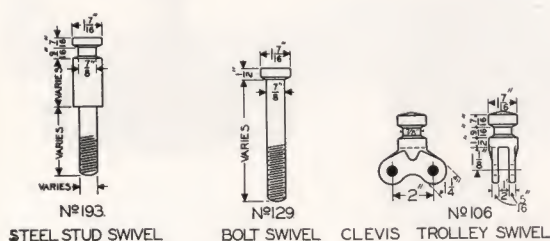
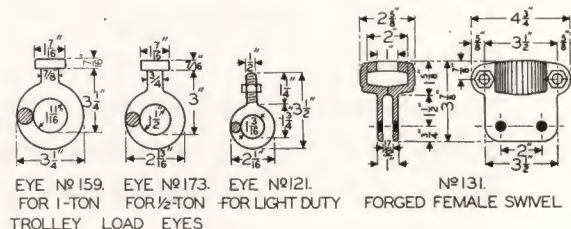
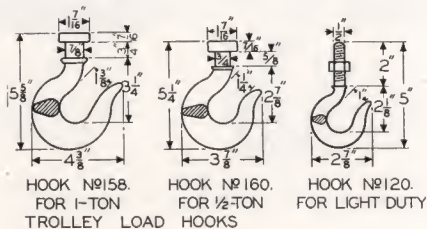
## Trolleys Equipped with Oil Seal Bearings

For those unusual conditions demanding freedom from the necessity of lubricating trolleys or where extremely abrasive dust would cause damage, trolley wheels No. 152 and No. 192 are equipped with special oil seals to assure perfect closure of bearings. These wheels roll equally as easily as the standard numbers, offering the same advantages. For trolley dimensions see drawings on pages listed in the table below.

Capacity	Trolley Number	Number Wheels	Dimensions on Page
500	1502	2	73
750	1572	2	74
1000	1792	2	75
1000	1654	4	76
1500	1624	4	77
2000	1804	4	78
2000	1758	8	79
3000	1718	8	80
4000	1818	8	81

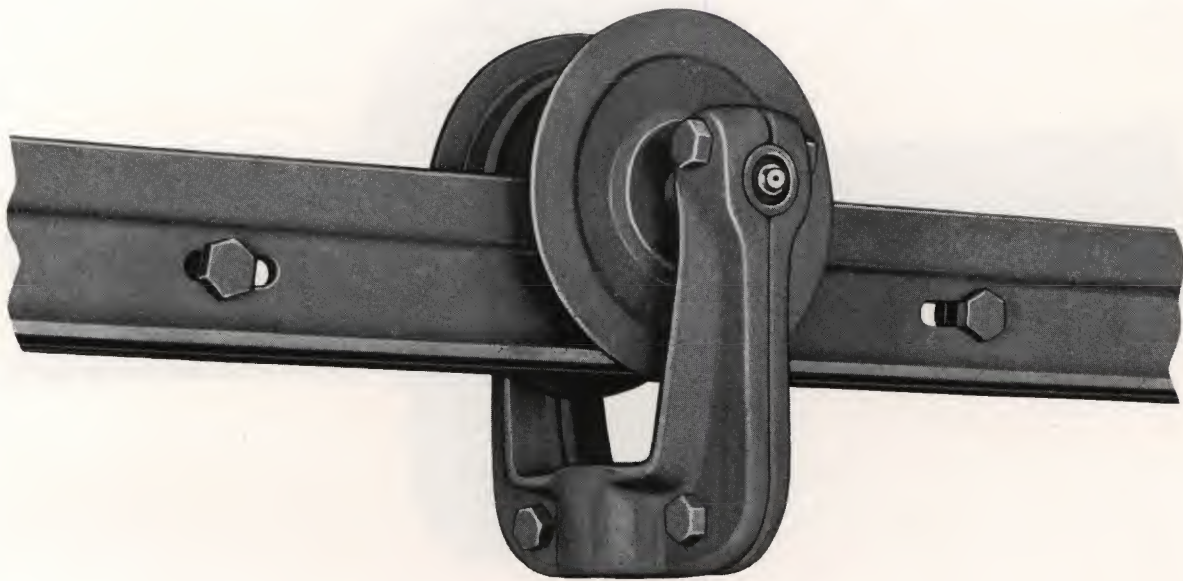
For special requirements all trolleys except No. 188 and No. 189 can be furnished with oil seal bearings.

## DIMENSION DRAWINGS OF LOAD SUSPENSION FITTINGS



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 150 Two-Wheel Trolley

Capacity, 500 Pounds

### SPECIFICATIONS

**Wheels:** No. 191 drop forged, hardened tread.  
**Wheel Yoke:** No. 102 drop forged.  
**Wheel Bearings:** New Departure single row precision ball.

**Axles:** Machined steel.  
**Lubrication:** Special hollow axle, with Zerk fittings.  
**Finish:** Green Enamel.  
**Weight:** 8 $\frac{3}{4}$  pounds.

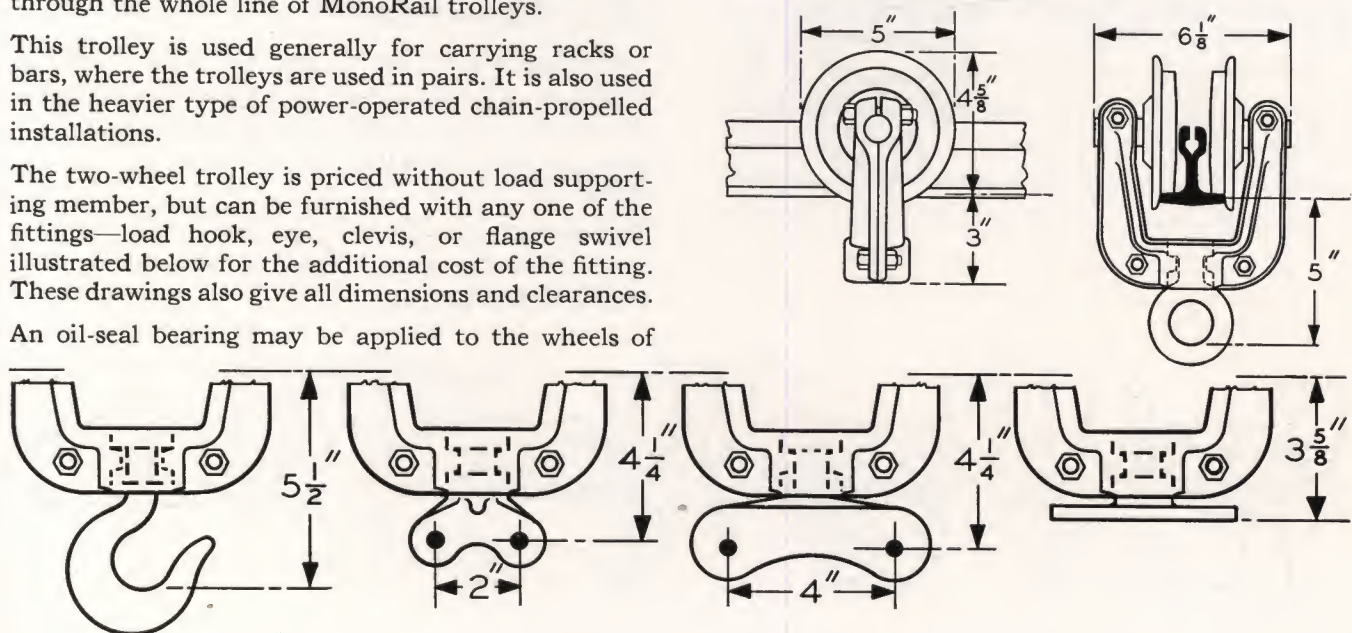
American MonoRail Two-Wheel Trolley No. 150, illustrated above, is an all-steel trolley unit of design, material and construction consistently followed out through the whole line of MonoRail trolleys.

This trolley is used generally for carrying racks or bars, where the trolleys are used in pairs. It is also used in the heavier type of power-operated chain-propelled installations.

The two-wheel trolley is priced without load supporting member, but can be furnished with any one of the fittings—load hook, eye, clevis, or flange swivel illustrated below for the additional cost of the fitting. These drawings also give all dimensions and clearances.

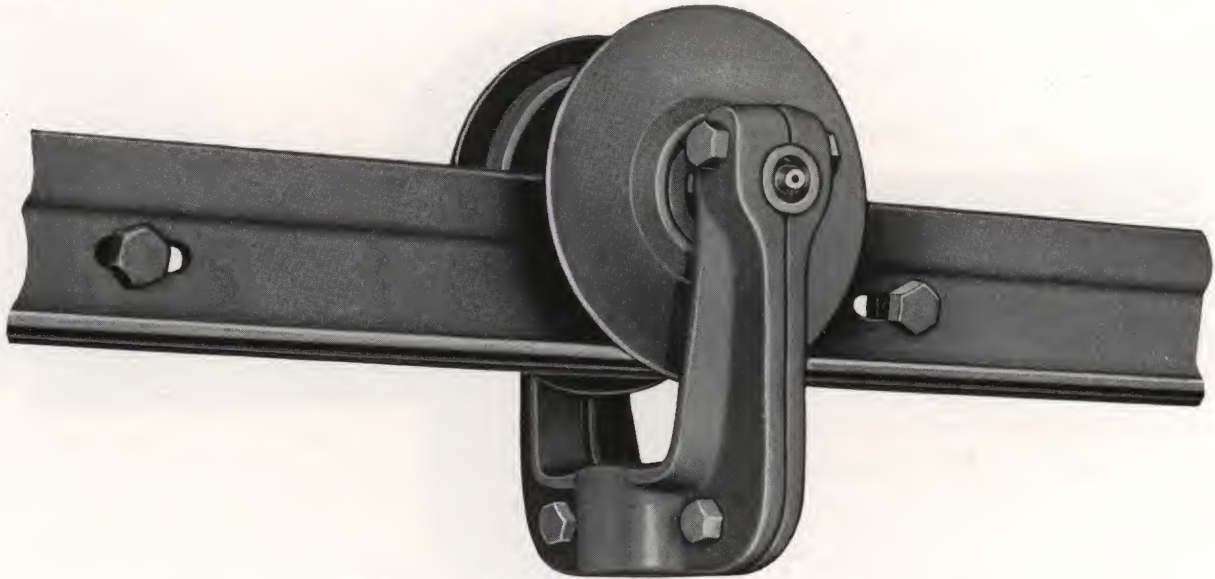
An oil-seal bearing may be applied to the wheels of

this trolley where freedom from the necessity of lubrication is a considerable advantage or where a perfectly oil tight bearing is required.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





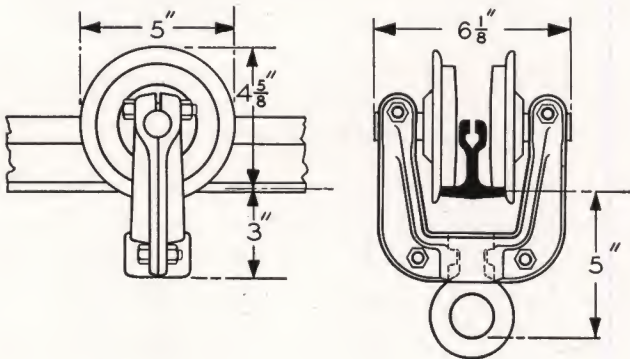
## No. 157 Two-Wheel Trolley

Capacity, 750 Pounds

### SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.  
**Wheel Yoke:** No. 102 drop forged.  
**Wheel Bearings:** Heavy duty, New Departure single row precision ball.

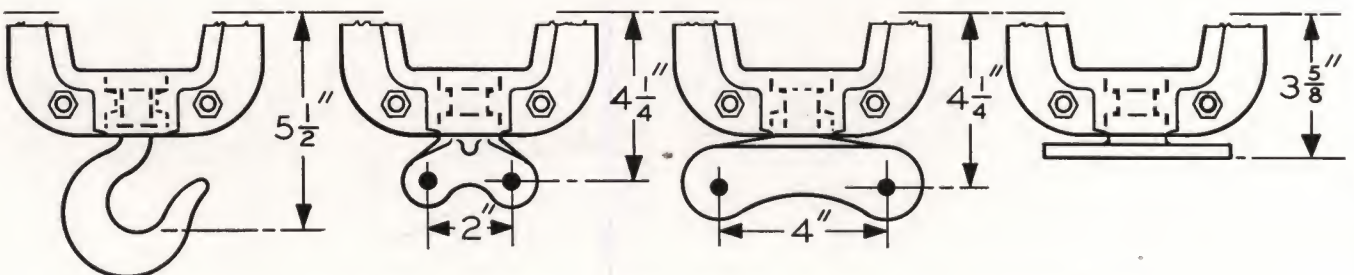
**Axles:** Machined steel.  
**Lubrication:** Through axle with Zerk fitting.  
**Finish:** Green Enamel.  
**Weight:** 10 $\frac{3}{4}$  pounds.



To provide for extra load bearing capacity as well as pressure lubrication trolley wheel No. 164 is assembled with yoke No. 102 to make up this two-wheel trolley. The wheels and wheel yoke, or frame, are drop forgings. Machine bolts are used throughout for assembly and all nuts are locked.

Two-Wheel Trolley No. 157 is priced without load supporting member but can be furnished with load hook, eye or other load carrying units as illustrated below, when so ordered and for the additional cost of the fitting.

This trolley finds application in the carrying of bars, or racks, or on the heavier type of power-driven chain propelled installation.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 179 Two-Wheel Trolley

Capacity, 1000 Pounds

### SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.

**Wheel Yokes:** No. 145 drop forged.

**Wheel Bearings:** Heavy duty New Departure single row precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

**Finish:** Green Enamel.

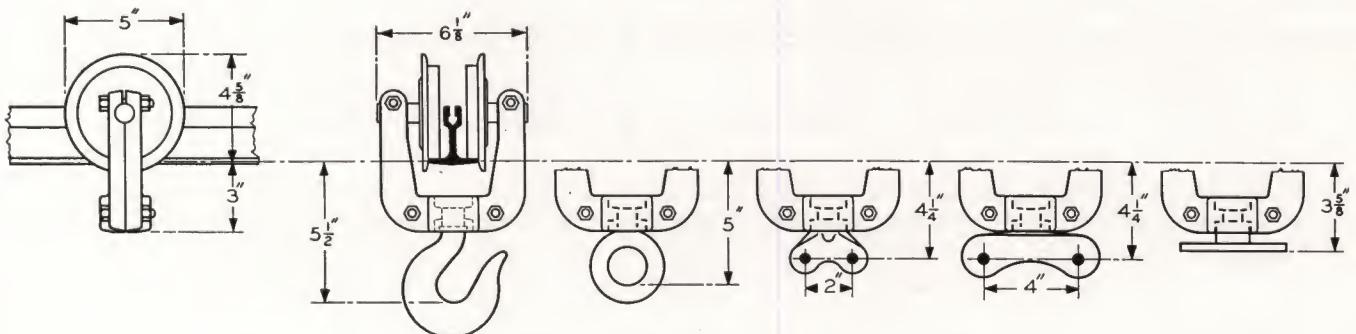
**Weight:** 11  $\frac{1}{4}$  pounds.

Trolley No. 179 was developed for use under conditions where load distribution requires concentration of 1000 pounds on two wheels.

This extra duty has been built into these trolleys by the use of a more powerful yoke and wheel assembly together with heavier axles.

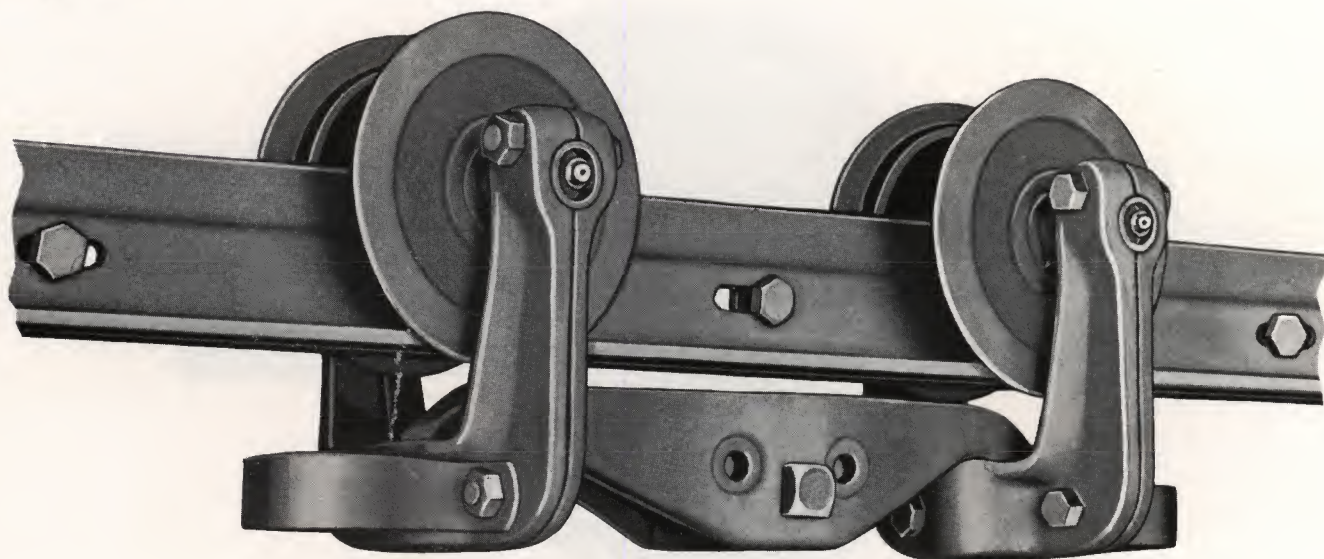
The two-wheel trolley shown above is rated well within its capacity with an ample factor of reserve strength.

This trolley is priced without load supporting member, but can be furnished, on request, with any one of the fittings—load hook, eye, clevis or other swivels as illustrated below at the additional cost of the fitting. Drawings give also all dimensions and clearances.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 165 Four-Wheel Trolley

Capacity, 1000 Pounds

### SPECIFICATIONS

**Wheels:** No. 191 drop forged, hardened tread.

**Wheel Yokes:** No. 102 drop forged.

**Wheel Bearings:** Single row New Departure precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axles with Zerk fittings.

**Load Bar:** No. 167 drop forged. Furnished regularly with No. 118 hoist hook bearing.

Load Bar will be furnished with any fitting—load hook, eye, swivel or clevis shown below—without additional charge.

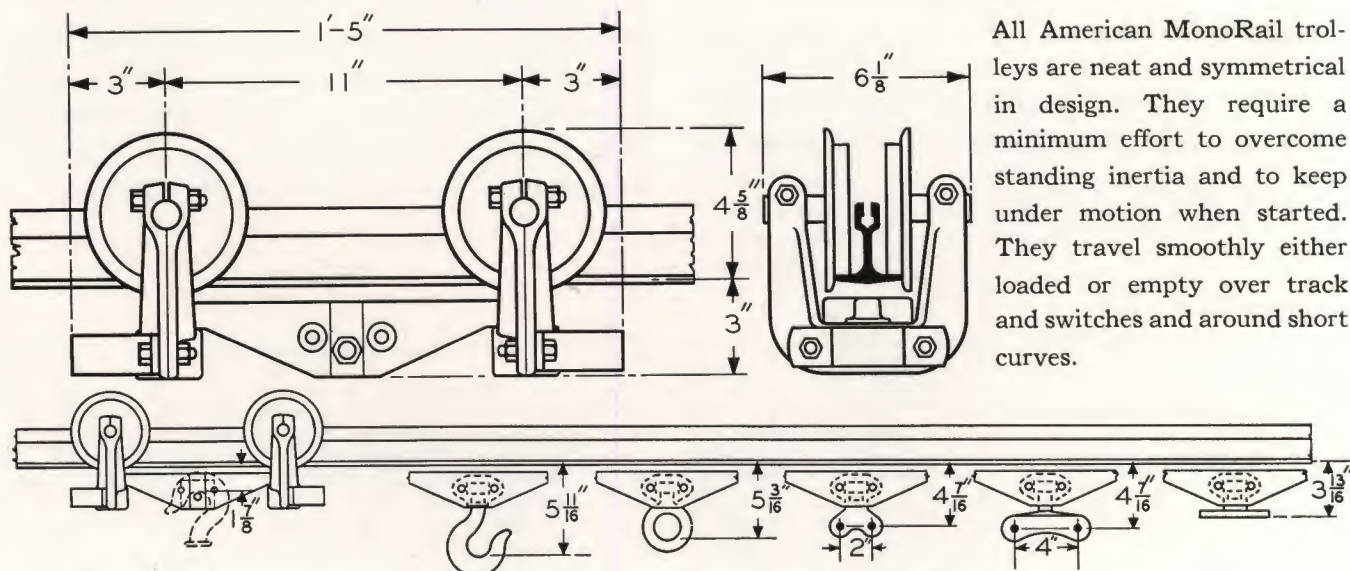
**Finish:** Green Enamel.

**Weight:** 24 pounds.

Four-wheel trolley No. 165 is made up of two trolleys No. 150 coupled by a drop forged load bar.

The load bar is assembled on top of the drop forged trolley yoke which brings it up close to the rail, providing a maximum saving in headroom.

Unless otherwise specified load bars are equipped with No. 118 internal hook bearings. Other load suspension fittings as shown below will be furnished at no additional cost when so ordered.



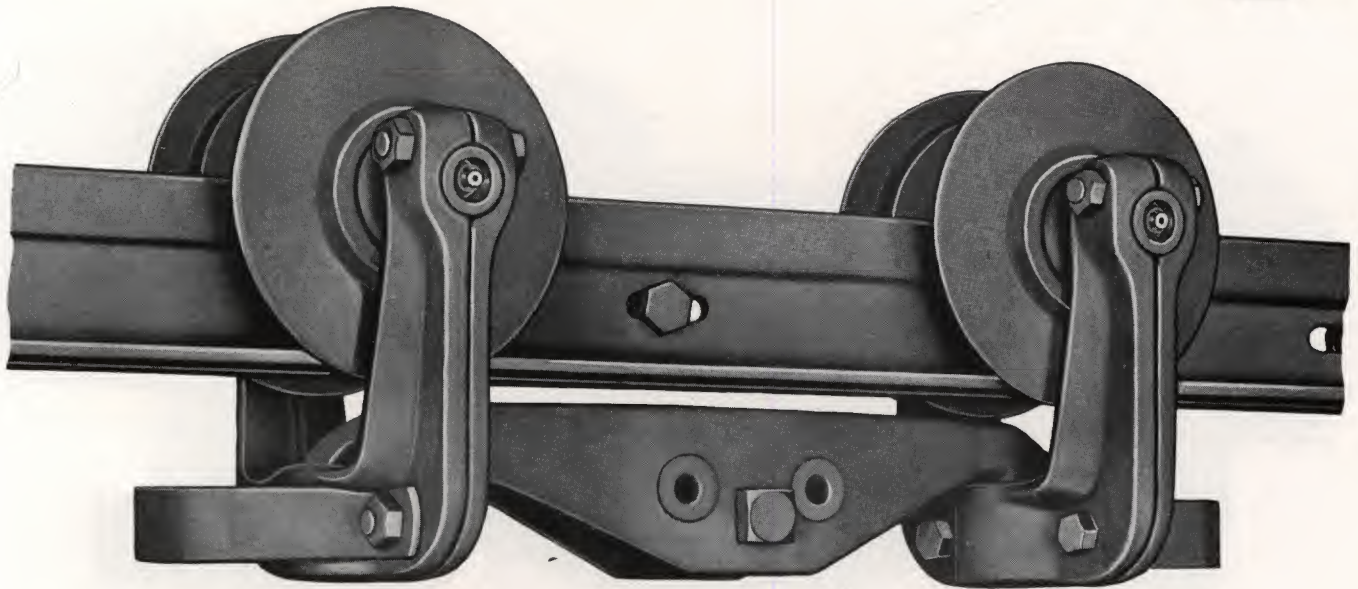
All American MonoRail trolleys are neat and symmetrical in design. They require a minimum effort to overcome standing inertia and to keep under motion when started. They travel smoothly either loaded or empty over track and switches and around short curves.

No. 118 Hook Bearing

Above fittings mounted in No. 213 Female Swivel Bushing

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 162 Four-Wheel Trolley

Capacity, 1500 Pounds

### SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.

**Wheel Yokes:** No. 102 drop forged.

**Wheel Bearings:** Heavy duty New Departure single row precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

**Load Bar:** No. 167 drop forged. Furnished regularly with No. 118 hoist hook bearing.

Load Bar will be furnished with any fitting—load hook, eye, swivel or clevis shown below—without additional charge.

**Finish:** Green Enamel.

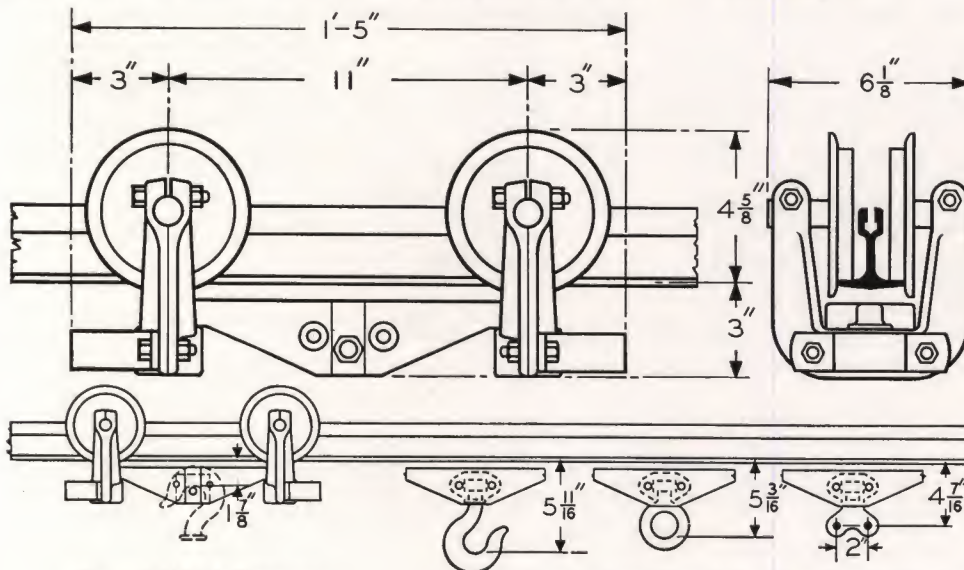
**Weight:** 30 pounds.

American MonoRail four-wheel trolley No. 162 is made up of two No. 157 trolleys coupled with drop forged load bar No. 167.

The load bar is assembled on top of the drop forged wheel yoke or trolley frame, with a saving of headroom

by bringing the load support close to the rail.

This load bar is regularly equipped with an internal hoist hook bearing, but any one of the load carrying units shown below will be supplied on order, at no additional cost.



No. 118 Hook Bearing

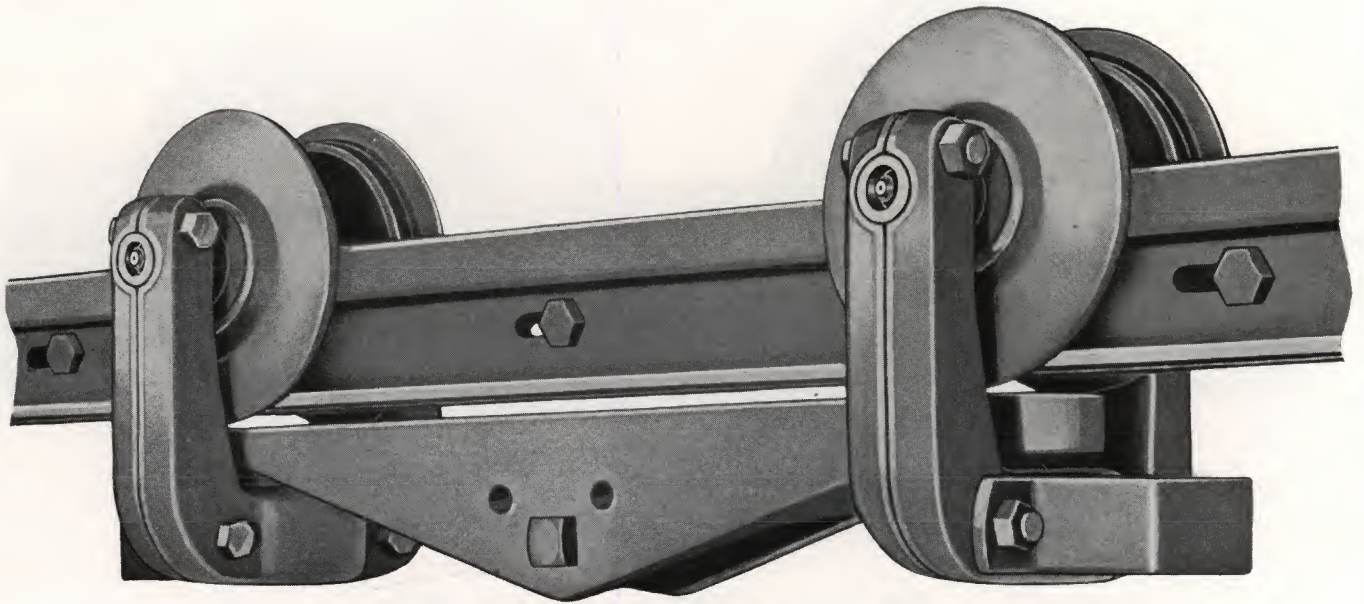
Above fittings seated in No. 213 Female Swivel Bushing

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*

Trolleys are equipped with bumpers so that any number of them may be pushed along the track without wheels binding.

This trolley travels smoothly over track, through switches, and around short curves when loaded or empty.





## No. 180 Four-Wheel Trolley

Capacity, 2000 Pounds

### SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.

**Wheel Yokes:** No. 145 drop forged.

**Wheel Bearings:** Heavy duty New Departure single row precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

**Load Bar:** No. 212 drop forged. Furnished regularly with No. 118 hoist hook bearing. Will be furnished, if so ordered, with load hook, eye, clevis, or swivel as shown below, at no additional cost.

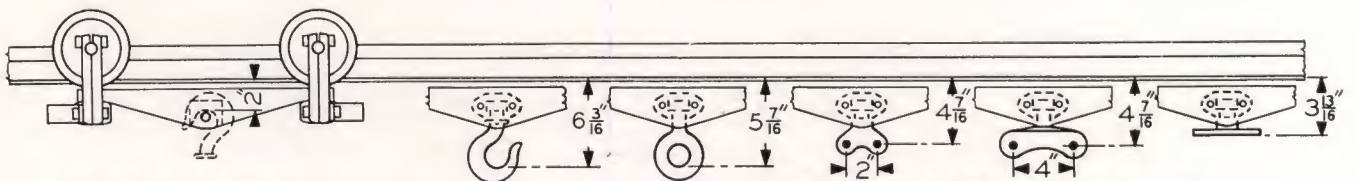
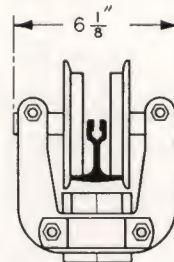
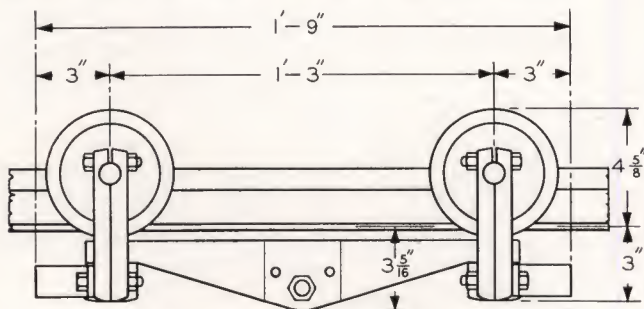
**Finish:** Green Enamel.

**Weight:** 34 pounds.

Four-wheel trolley No. 180 is made up of two No. 179 trolleys coupled with forged steel load bar. It will handle one ton loads efficiently and continuously.

The extra heavy load bar furnished with this assembly affords minimum headroom clearance. It is fitted regularly with internal bearing for hoist hook, but will

be equipped with any one of the load carrying members shown in the illustration below at no extra cost.

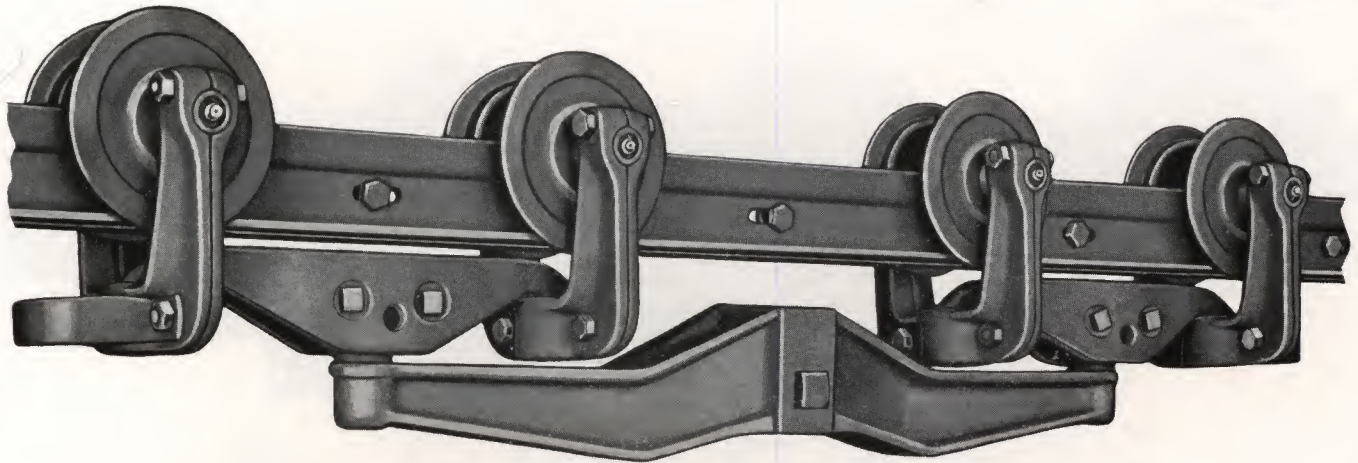


No. 118 Hook Bearing

Above fittings seated in No. 213 Female Swivel Bushing.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





# No. 175 Eight-Wheel Trolley

Capacity, 2000 Pounds

## SPECIFICATIONS

**Wheels:** No. 191 drop forged, hardened tread.

**Wheel Yokes:** No. 102 drop forged.

**Wheel Bearings:** New Departure single row precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fittings.

**Load Bar:** No. 115 alloy steel casting with end swivels of turned nickel steel.

**Load Bars:** Furnished regularly with No. 118 hoist hook bearing.

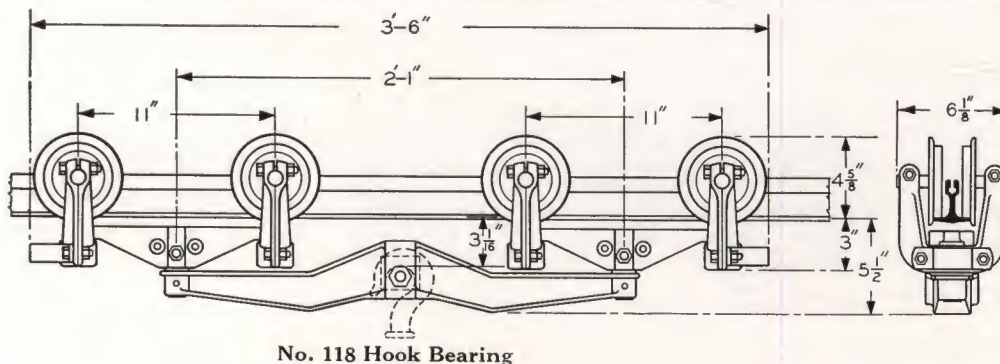
Load Bar will be furnished with any fitting—load hook, eye, swivel or clevis shown below—without additional charge.

**Finish:** Green Enamel.

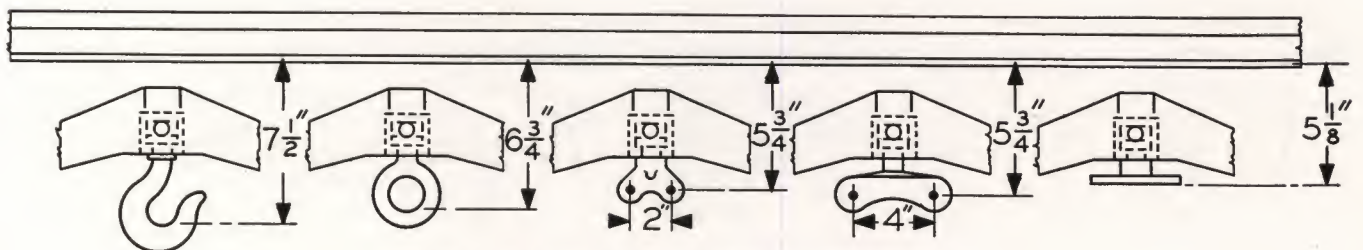
**Weight:** 67 pounds.

Eight-wheel trolley No. 175 consists of two trolleys No. 165 coupled by a heavy, alloy steel load bar. Load

bearing stud swivels on this bar are turned nickel steel. The bar is arched to bring the load support close to the rail.



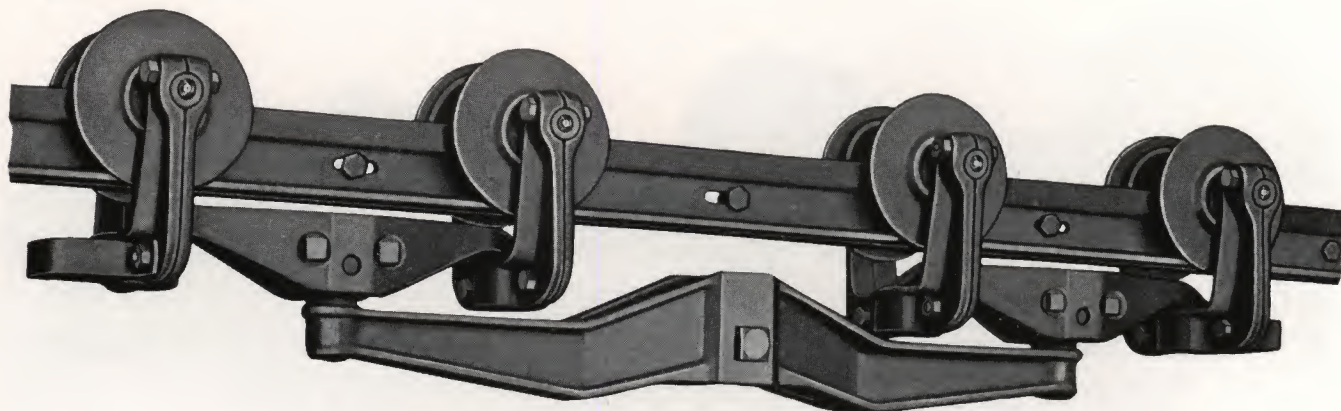
The eight-wheel assembly distributes the load over a greater track flange area so that the trolley operates with extreme ease and smoothness under capacity load around short curves and through switches.



Above fittings seated in No. 213 Female Swivel Bushing.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 171 Eight-Wheel Trolley

Capacity, 3000 Pounds

### SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.

**Wheel Yokes:** No. 102 drop forged.

**Wheel Bearings:** Heavy duty New Departure single row precision ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

**Load Bar:** No. 115 alloy steel casting with end swivels of turned nickel steel.

**Load Bar:** Furnished regularly with No. 118 hoist hook bearing.

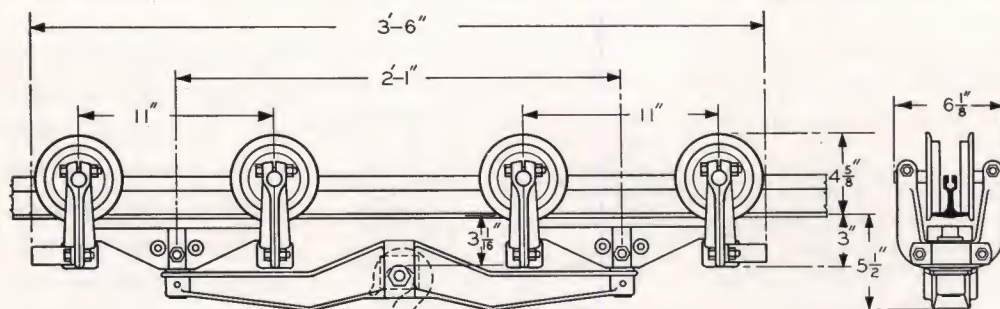
Load Bar will be furnished with any fitting—load hook, eye, swivel or clevis shown below—without additional charge.

**Finish:** Green Enamel.

**Weight:** 75 pounds.

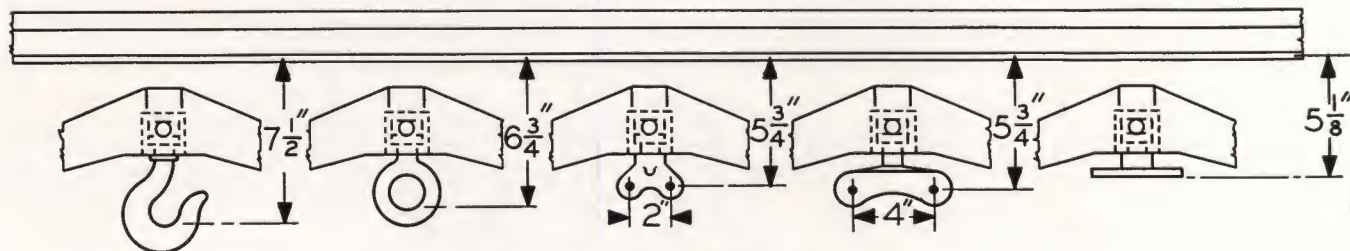
Eight-wheel trolley No. 171 consists of two trolleys, No. 162, coupled by a heavy alloy steel load bar. The use of swivel connections on all American MonoRail trolleys spreads the load uniformly over the whole wheel base.

The eight-wheel assembly distributes the load over a greater track flange area so that the trolley operates with ease and smoothness around short curves and through switches.



No. 118 Hook Bearing

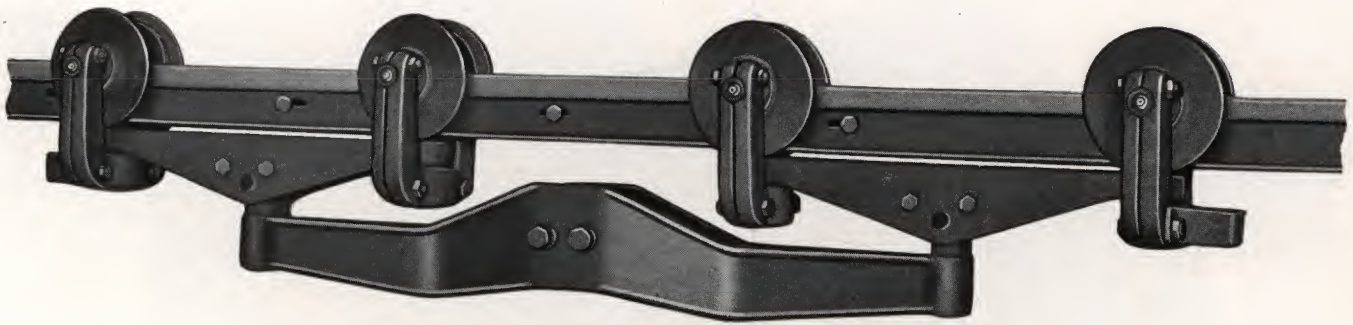
Load bars are regularly fitted with hoist hook bearing, but will be furnished with any one of the fittings illustrated below, when so ordered, at no additional cost.



Above fittings seated in No. 213 Female Swivel Bushing.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





# No. 181 Eight-Wheel Trolley

Capacity, 4000 Pounds

## SPECIFICATIONS

**Wheels:** No. 164 drop forged, hardened tread.

**Wheel Yokes:** No. 145 drop forged.

**Wheel Bearings:** Heavy duty New Departure single row precision ball.

**Axes:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

**Load Bar:** Alloy steel casting, No. 215. Furnished regularly with hoist hook bearing. May be fitted with any one of the alternative load suspension units shown below, at no extra cost.

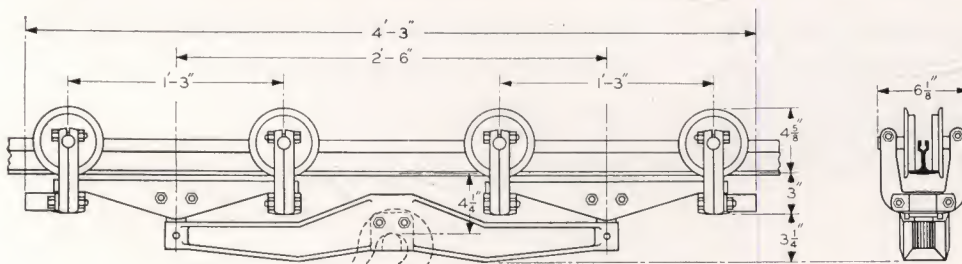
**Finish:** Green Enamel.

**Weight:** 100 pounds.

This eight-wheel trolley consists of two trolleys No. 180 coupled by a heavy alloy steel load bar.

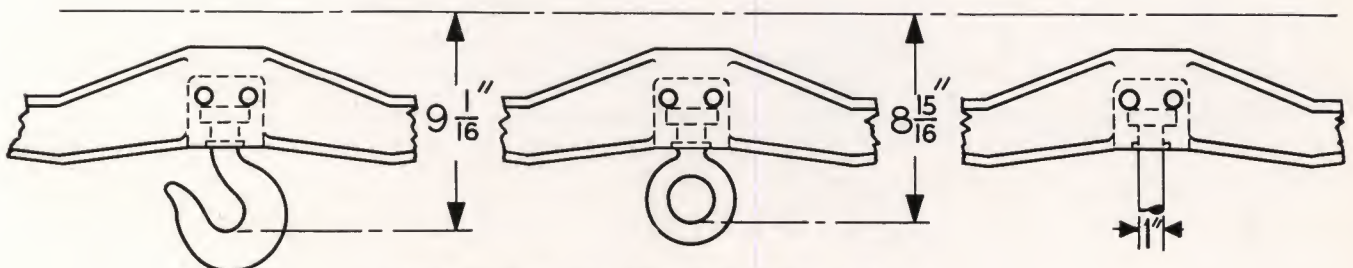
Built up to American MonoRail standards in every de-

tail of material and workmanship, the No. 181 trolley can be depended on for continuous, trouble-free service where handling requirements are rigorous, where duty is continuous and loads are heavy.



No. 217 Hook Bearing

The load bar on this trolley is regularly furnished with standard hoist hook bearing, but any one of the fittings shown below will be furnished on order at no extra cost.



Above fittings seated in No. 216 Female Swivel Bushing.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 188 Two-Wheel Trolley

Capacity, 250 Pounds

### SPECIFICATIONS

**Wheels:** No. 123 drop forged.

**Wheel Yokes:** No. 186 malleable casting.

**Wheel Bearings:** Self-contained ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

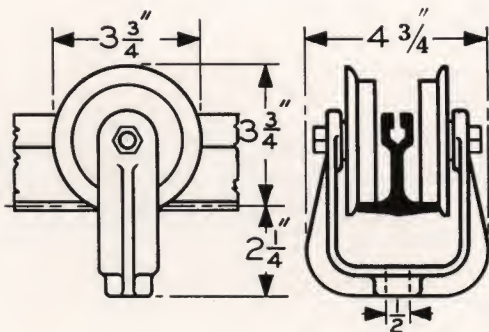
**Finish:** Green Enamel.

**Weight:** 4½ pounds.

American MonoRail Trolleys Nos. 188 and 189 have been designed to meet the need for conveying equipment in the hundreds of applications where the many comparatively light loads to be handled do not justify the cost of the heavier duty trolleys.

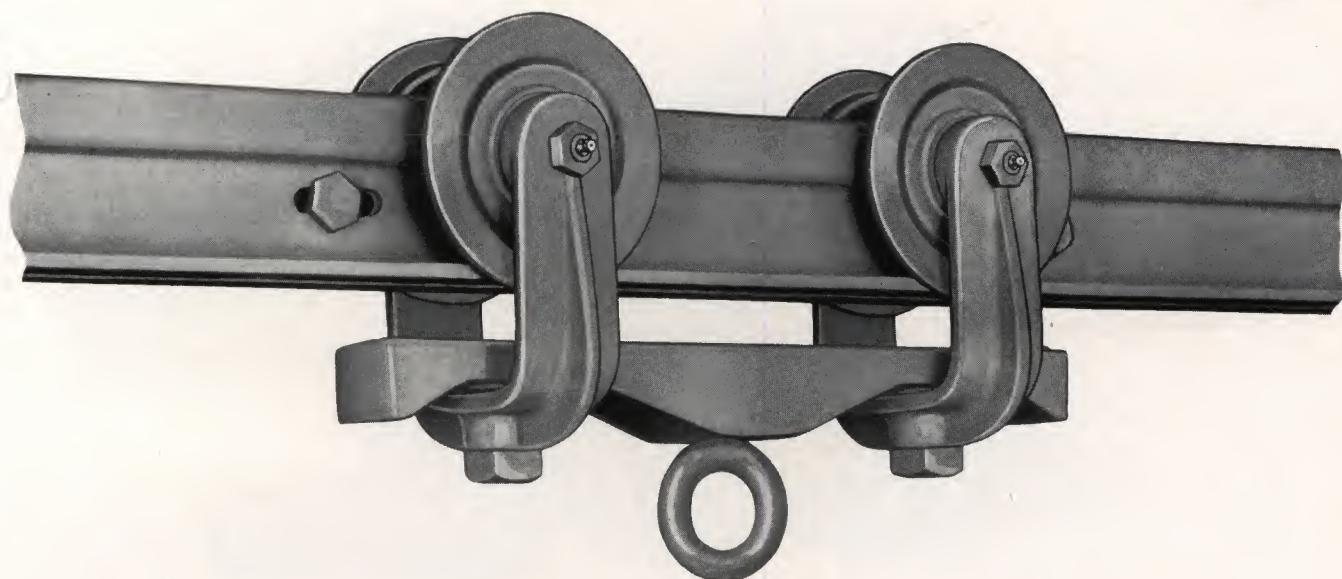
These MonoRail Trolleys are sturdy, free-running, and guaranteed for satisfactory service carrying loads within their rated capacity.

The drop forged steel wheels are mounted on self-contained ball bearings. The wheels are carried in a malleable iron yoke. While the two-wheel trolley shown above can be used in single units, it is especially recommended for use in pairs, attached to carrying bars, special racks, or for power-operated chain-driven installations where any number of trolleys can be connected.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 189 Four-Wheel Trolley

Capacity, 500 Pounds

### SPECIFICATIONS

**Wheels:** No. 123 drop forged.

**Wheel Yokes:** No. 186 malleable casting.

**Wheel Bearings:** Self-contained ball.

**Axles:** Machined steel.

**Load Bar:** No. 155 malleable iron.

**Load Support:** Vulcan forged load hook or eye.

**Lubrication:** Through axle with Zerk fitting.

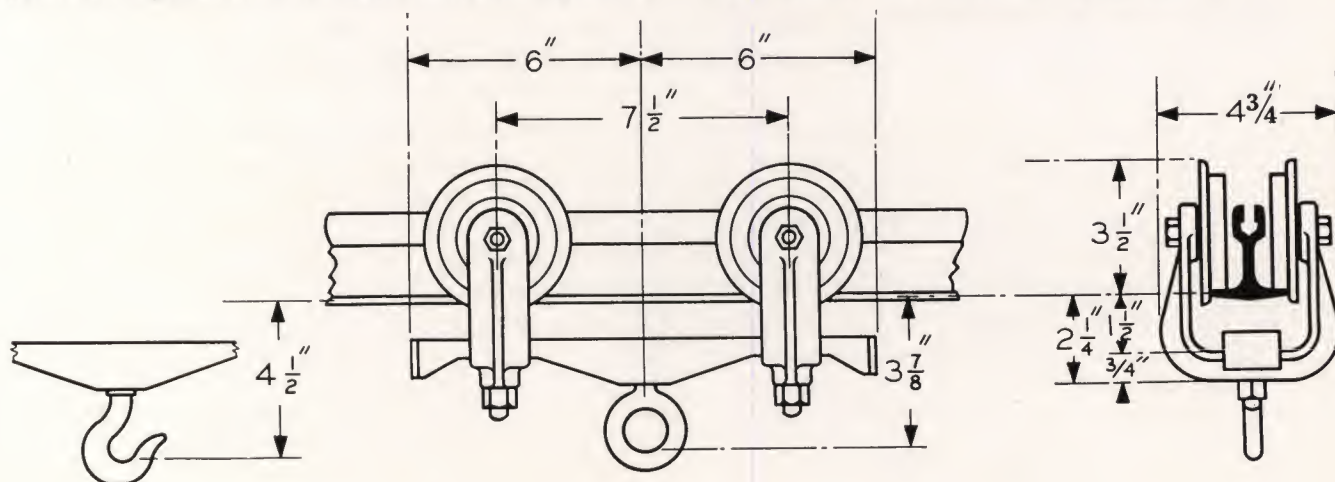
**Finish:** Green Enamel.

**Weight:** 12½ pounds.

Four-wheel American MonoRail Trolley No. 189 consists of two trolleys No. 188 coupled by a malleable load bar. It is a sturdy, free-running ball bearing trolley. It can be used in the ordinary way as single units, or for carrying racks or special carriers.

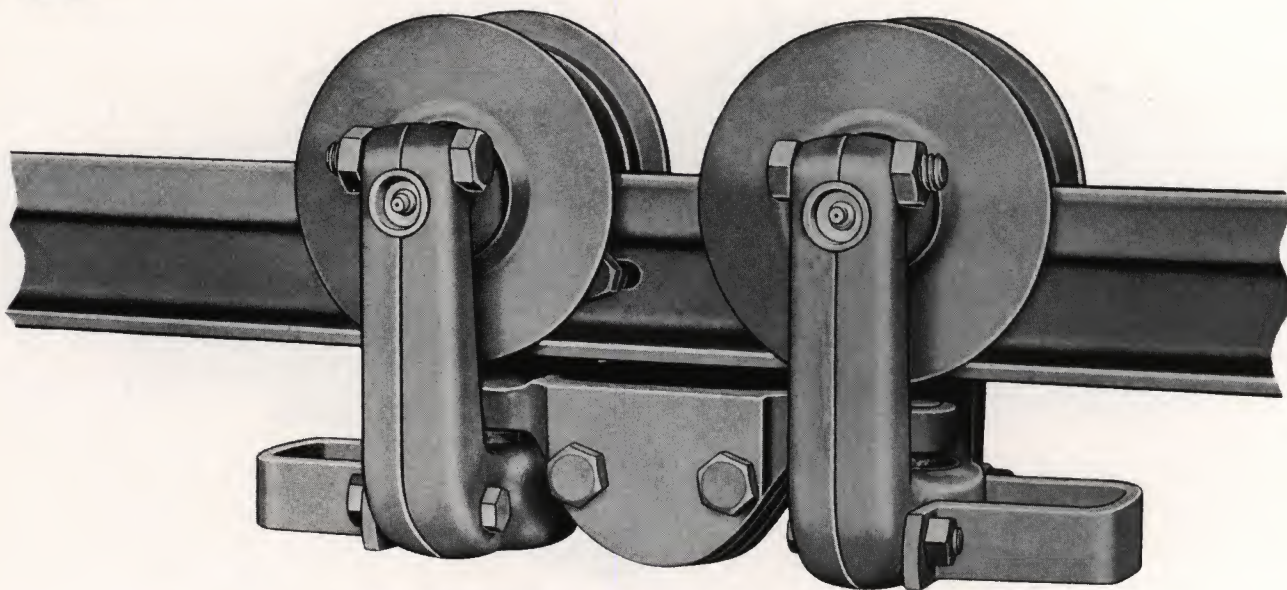
Where the application is for light loads and requires a

great many trolleys, the great carrying strength of the American MonoRail rail section will permit a wider spacing of hangers and the covering of longer spans. In most cases this will eliminate special supporting superstructure, bringing the cost of both equipment and installation down to a point where, for even very light service, the investment is justified.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## Special Close Coupled Trolleys

### Four-Wheel Trolleys

No. 147—1000 lb. Capacity  
No. 146—1500 lb. Capacity  
No. 142—2000 lb. Capacity

### Eight-Wheel Trolleys

No. 126—3000 lb. Capacity  
No. 127—4000 lb. Capacity  
No. 257—4000 lb. Capacity

### SPECIFICATIONS

**Wheels:** No. 191 used on trolley No. 147. No. 164 on all other trolleys. All wheels drop forged with hardened treads.

**Yokes:** No. 102 used on trolleys No. 147, 146 and 126. All others take yoke No. 145.

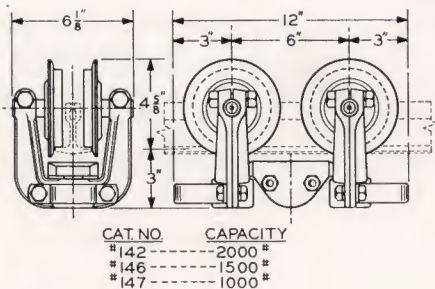
**Wheel Bearing:** New Departure Precision Ball.

**Axles:** Machined steel.

**Lubrication:** Through axle with Zerk fitting.

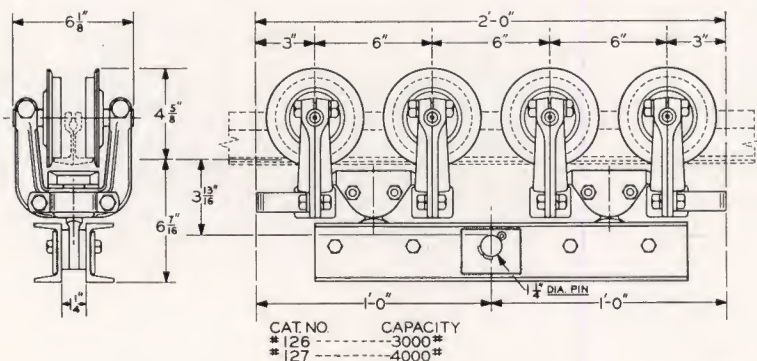
**Load Bars:** No. 114 alloy steel casting fitted with A-213 swivel bushing. Thrust bearing load bar No. 240 furnished with No. 257 Trolley.

**Load Bars:** On eight-wheel trolleys—fabricated from steel channels with nickel steel load hook bearing pin.



This special trolley permits concentration of loads over four or eight wheels which are as closely coupled as possible, and allow full swivel around the shortest of curves.

Certain types of electric hoists are easily adapted to American MonoRail track with a close coupled trolley mounted on each end to bring the hook up as high as possible for maximum clearance.



The eight-wheel type affords maximum concentration of heavy loads to allow normal hoist operation to within one foot from the end of track or crane bridge.

All the advantages of standard trolleys as described in the foregoing pages apply to the close coupled units listed above.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# Electrified American MonoRail

With the many advantages described below, American MonoRail offers the most practical and economical means of furnishing power for operation of electric hoists, cranes and other units on a MonoRail System.

## CONDUCTORS

All standard electrification, with the exception of crane runways, is accomplished by means of electro-galvanized steel bar channel sections  $\frac{3}{4}$  in. wide by  $\frac{3}{8}$  in. deep and  $\frac{1}{8}$  in. thick. Conductors are mounted in insulator blocks normally spaced with a maximum of 4 feet. The steel conductor bars are galvanized to provide greater conductivity of current and to prevent rust.

## INSULATION

Special Bakelite blocks are clamped to the contour of the conductor channels. The special Bakelite insulating material has an instantaneous dielectric strength of 240 volts per mil in a  $\frac{1}{8}$  in. section, that is, 28,000 volts are required to puncture such a section. Bakelite is unaffected by oil and is non-hygroscopic. It is resistant to shock or vibration and will not rust, rot or deteriorate. Water, oil, gas solvents and ordinary chemicals cannot harm it. Under active industrial conditions it has demonstrated these qualities without failure or excessive replacement.

## COMPACTNESS

Close grouping of rigid conductors in pairs above the track results in compact assemblies. This permits the design of electrified switches with only half the usual switch throw. Such space savings reflect directly in the layout of a MonoRail system and create cost reduction in every unit entering therein.

## ADAPTABILITY

Since the compact mounting of conductor bars allows the use of two, three or more lines of electrification, the American MonoRail system adapts itself to the characteristics of any electric current in general use. Variations of control possibilities throughout the system are practically unlimited. It is therefore possible to select the proper hoist or other electric apparatus to serve a particular purpose regardless of the available current. Only in rare cases must special provision be made for phase reversal.

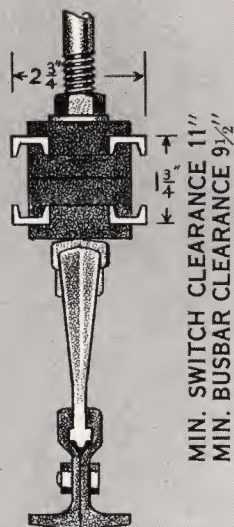
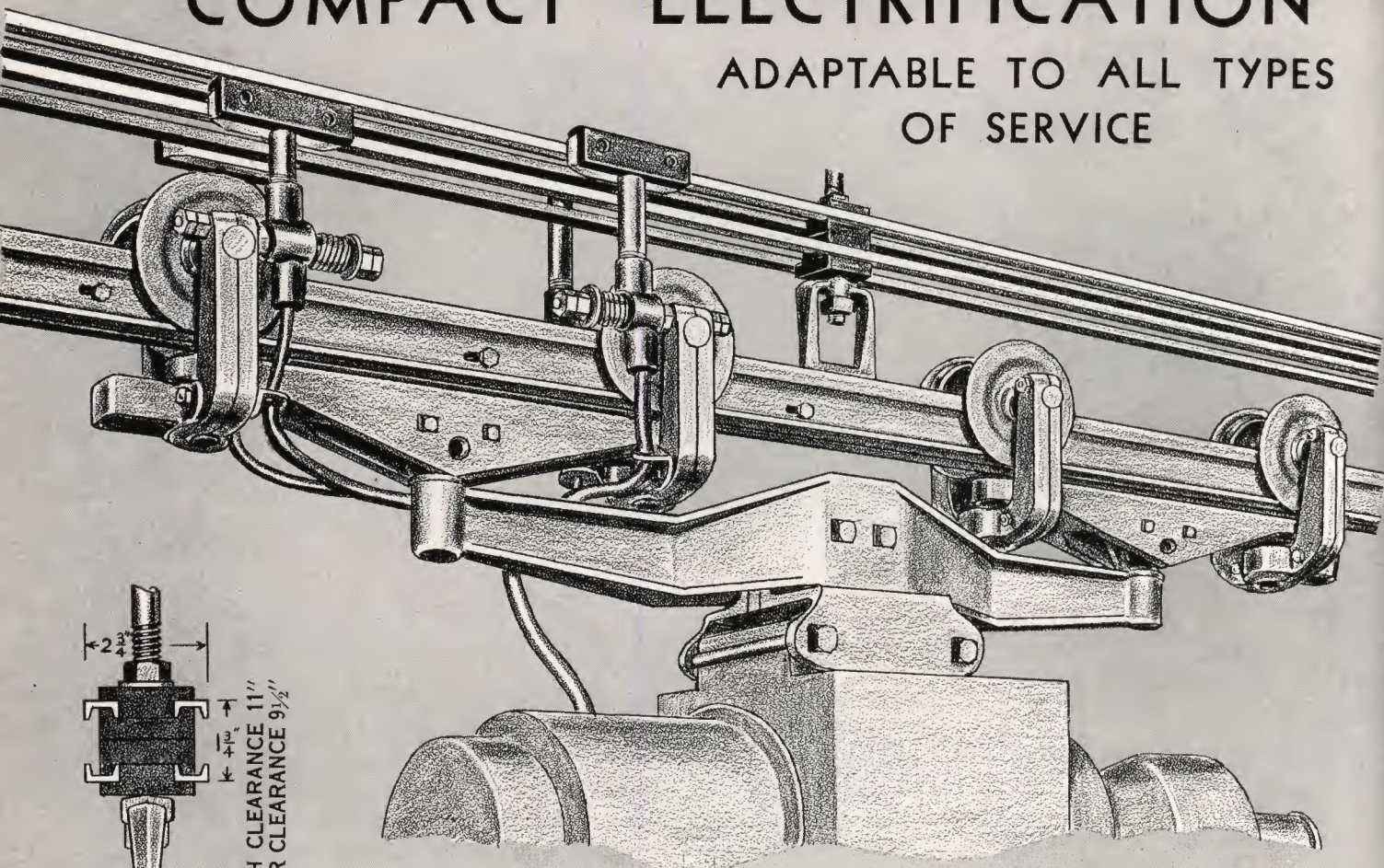
## SAFETY

Because it is bracketed in closely over the tracks, possibility of accidental contact is minimized. American MonoRail Electrification is classed as Rigid Bus Bar wiring and is APPROVED BY THE UNDERWRITERS.



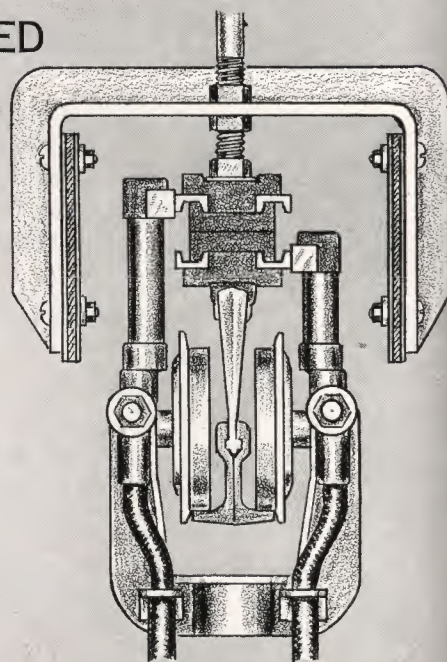
# COMPACT ELECTRIFICATION

ADAPTABLE TO ALL TYPES  
OF SERVICE

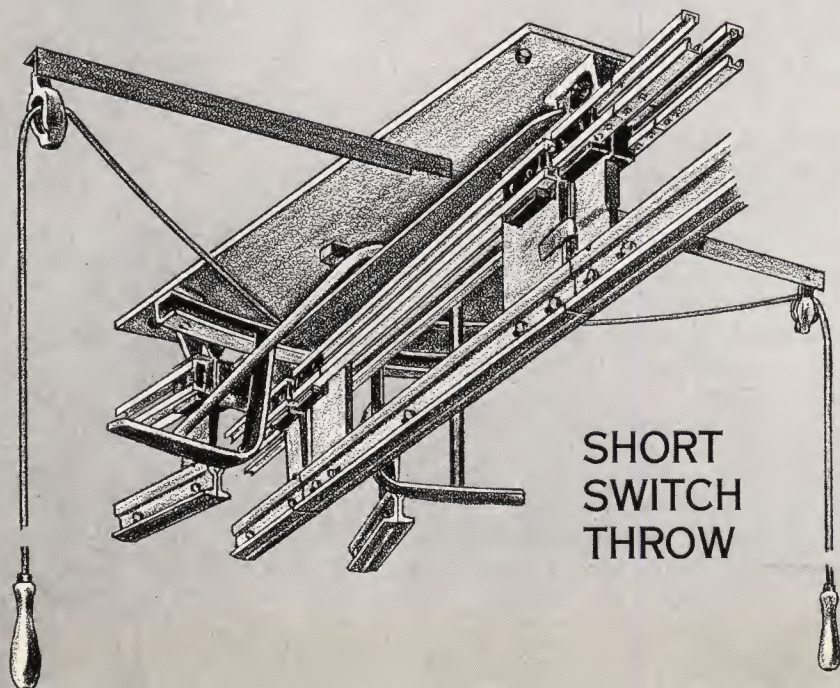


LOW HEAD ROOM

EASILY SHIELDED  
FOR  
EXTRA SAFETY



CONDUCTORS CLAMPED  
IN PAIRS ABOVE  
TRACK HANGER



SHORT  
SWITCH  
THROW



# AMERICAN MONORAIL

## Electrification Advantages

### Conductors

All standard electrification is accomplished by means of galvanized steel channel sections clamped in pairs in the insulator blocks above the track hangers. The steel conductor bars are galvanized to provide greater conductivity and to prevent rust.

### Insulators

Special bakelite blocks clamp the conductor channels in position for contact by the collectors. Bakelite is unaffected by oil, resistant to shock or vibration and will not rot or deteriorate. Ordinary gases or chemicals cannot do much harm to it.

### Collectors

Shoe type contactors of hard copper alloy are set in fiber housings and are attached to fiber tubes carrying the wires. Tubes thread into malleable hinges mounted on the trolley yoke. Adjustable coil springs around the hinge bolt maintain contact against the conductor bars. This method of collection furnishes a large contact area, assures polished conductors and thereby reduces arcing.

### Compactness

Close grouping of conductors in pairs above the track creates space savings directly reflected in the layout of a monorail system. Such compact assembly makes possible electrified switches with half the usual switch throw. Compactness aids in the design of equipment to perform a wide variety of automatic operations.

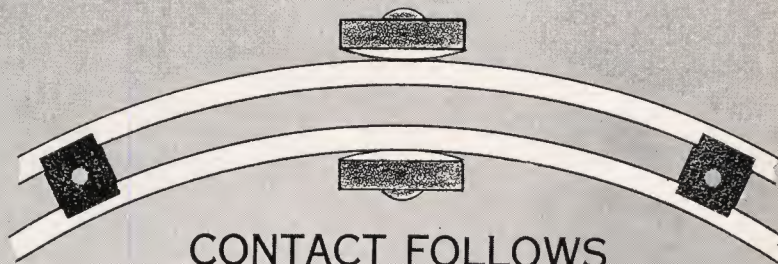
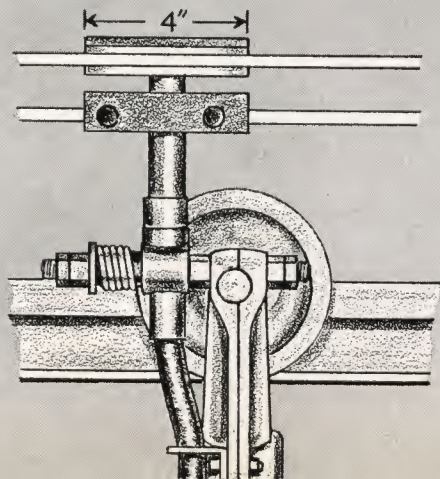
### Adaptability

Compact mounting of conductors permits the use of multiple lines to adapt the system to any current characteristics, as well as for unlimited control possibilities. Such adaptability eliminates the use of transformers and only in rare cases must special apparatus be used to prevent phase reversal.

### Safety

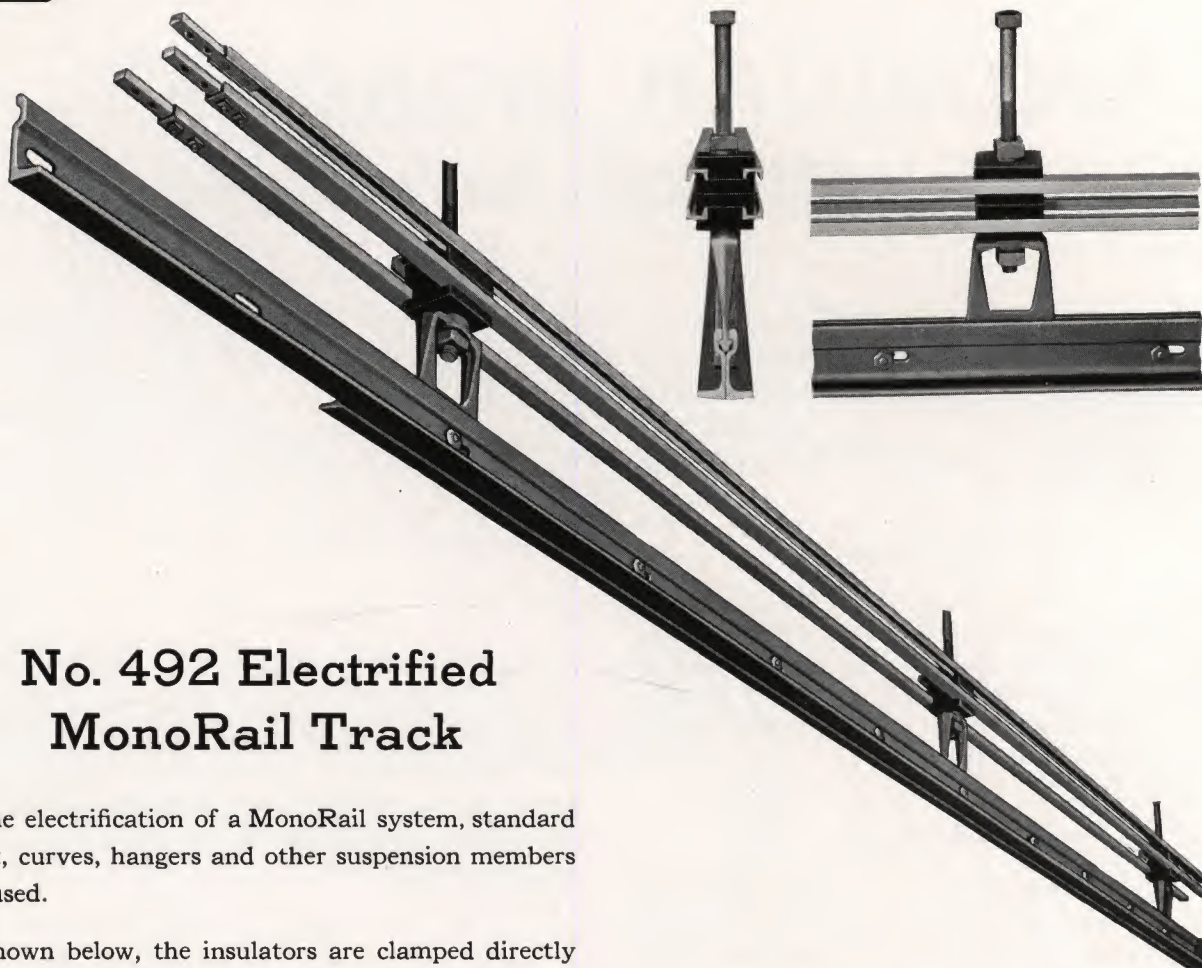
Because bus bars are bracketed in closely over the tracks, possibility of accidental contact is minimized. American MonoRail Electrification is classed as Rigid Bus Bar wiring and is APPROVED BY THE UNDERWRITERS.

### SHOE COLLECTOR PROVIDES LARGE CONTACT AREA



CONTACT FOLLOWS  
CURVE CONTOUR





## No. 492 Electrified MonoRail Track

In the electrification of a MonoRail system, standard track, curves, hangers and other suspension members are used.

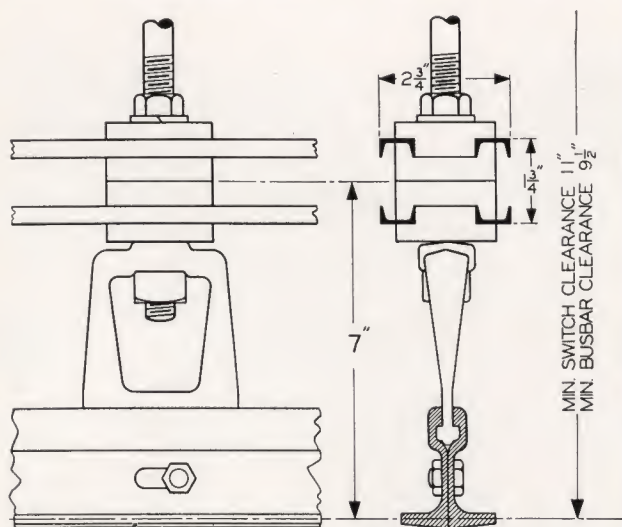
As shown below, the insulators are clamped directly on the hanger bolt which is provided with extra long threading for this purpose.

Insulator blocks are molded to the contour of the conductor bar with ample thickness of material in each block to provide added shock resistance. The male block fitting into the female when assembled, provides

complete insulation for the rod. The two parts are clamped on top of the forged hanger with a jam nut held by a lock washer. The clamping pressure is carried through the conductor bars holding them rigidly in their proper place. These insulators are used at all hanger rods and may be placed at intermediate positions where wider spacing of hangers is permitted by light loads.

The conductor bar is a galvanized steel channel section, giving sufficient rigidity and offering ample flat surface for contact with the collector shoe. Splicing is accomplished by the use of brass connectors bolted inside the channel groove giving full conductivity through the splice.

In electrifying MonoRail curves, the channel-type conductor bars are formed exactly to the radius of each track curve, conductor bars being mounted on hanger rods as described above for straight track.

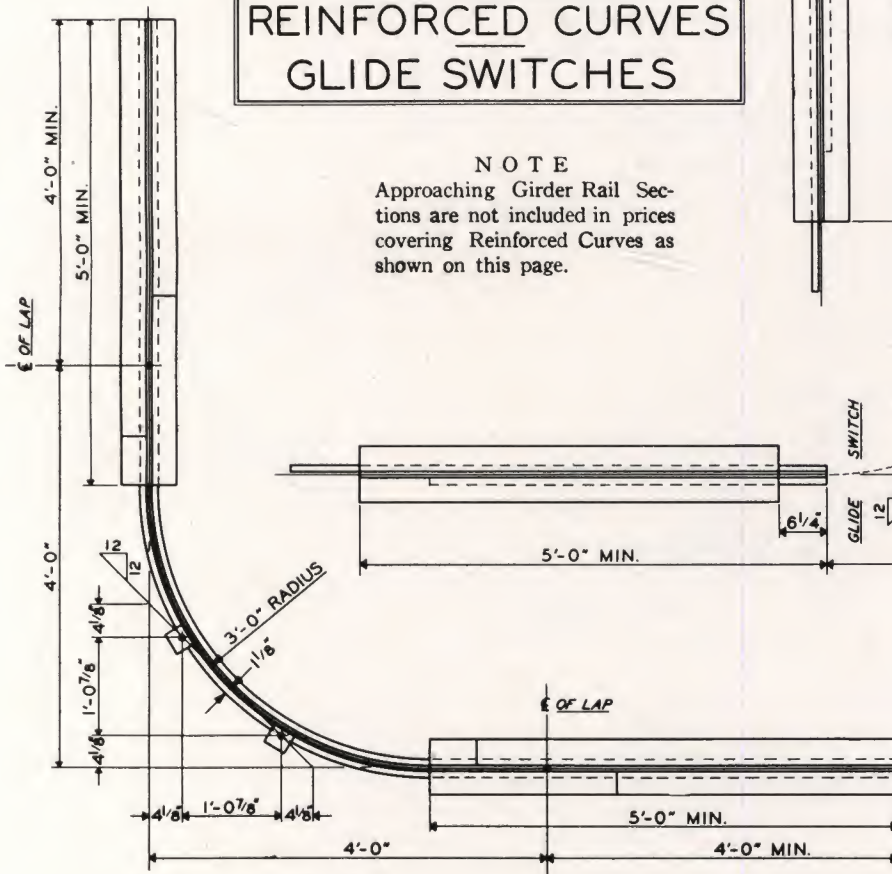


*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*

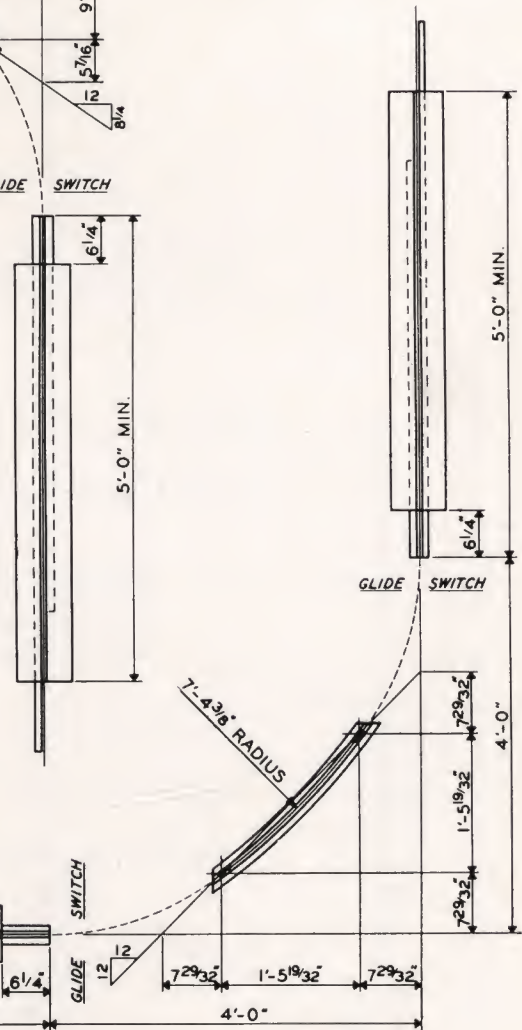


## REINFORCED CURVES GLIDE SWITCHES

**N O T E**  
Approaching Girder Rail Sections are not included in prices covering Reinforced Curves as shown on this page.



NO. 41 CURVE



NO. 44 CURVE

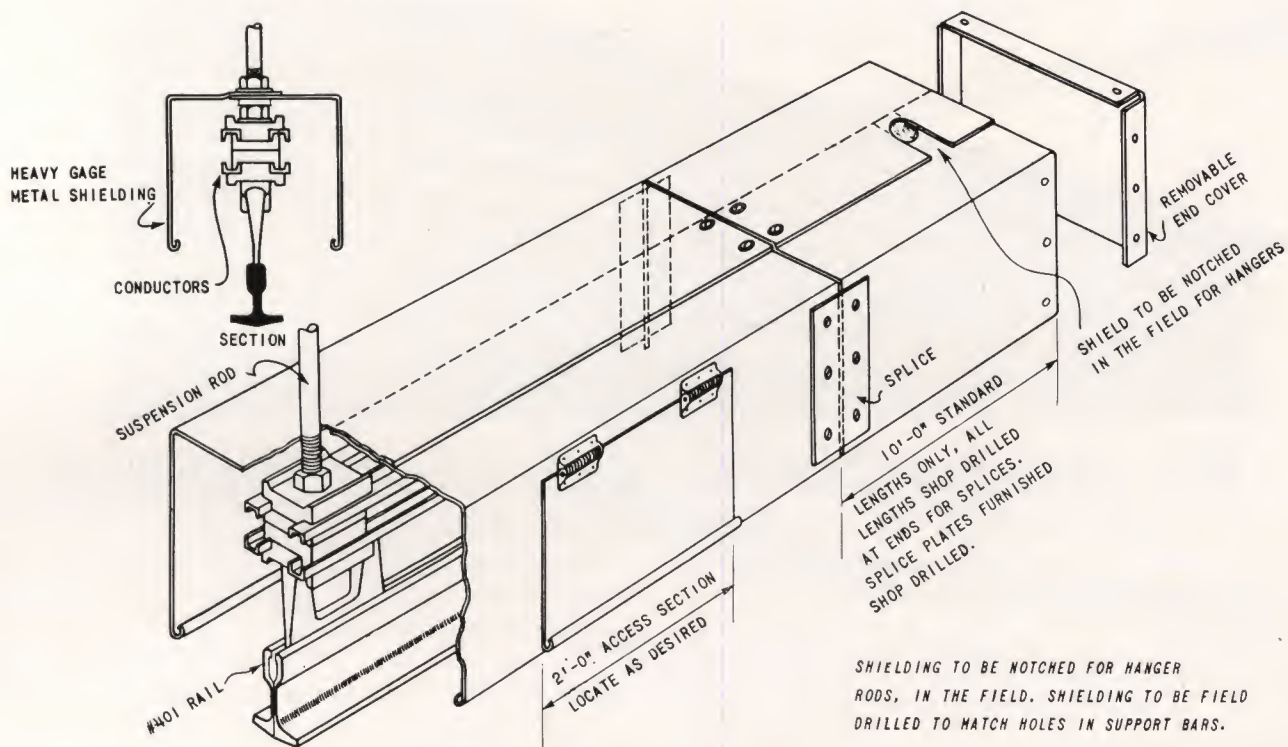
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



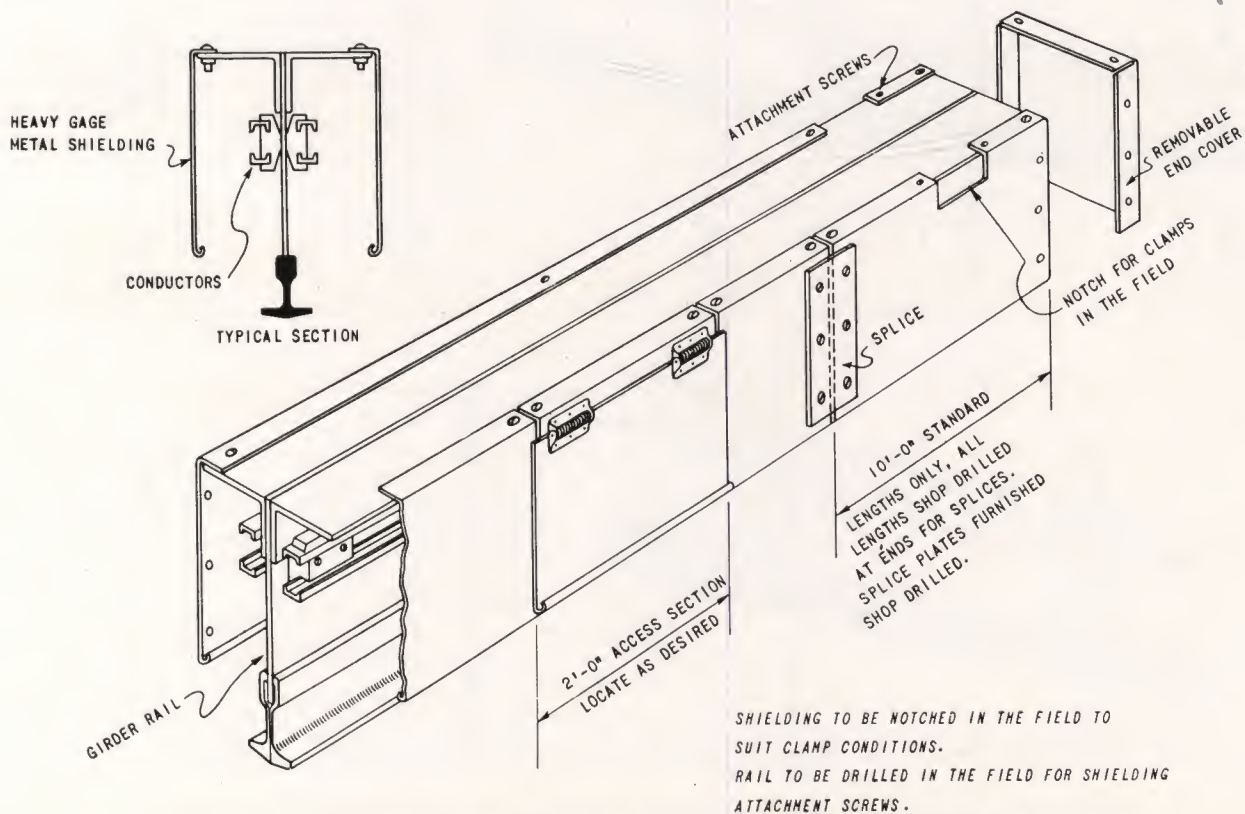




## NO. H-944 ELECTRIFICATION SHIELDING FOR STANDARD TRACK



## NO. H-941 ELECTRIFICATION SHIELDING FOR GIRDER RAIL



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





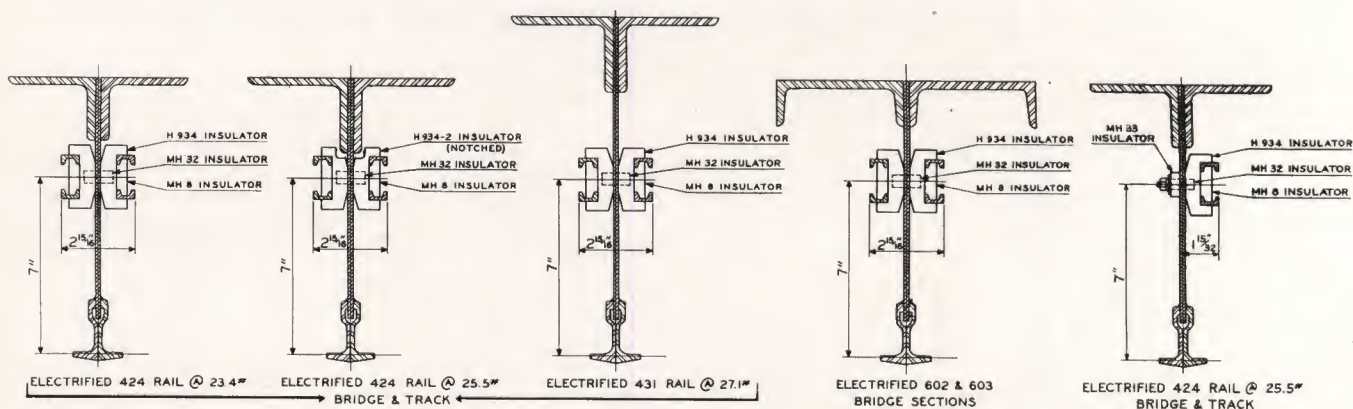
## No. H-950 Girder Rail Electrification

For use on 11" and 13 $\frac{1}{2}$ " depth Girder Rail only.

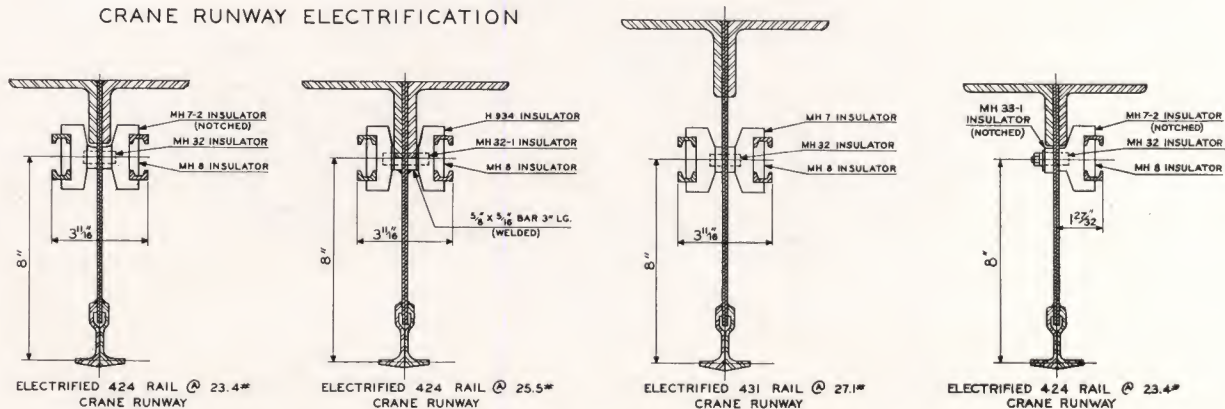
In the electrification of Girder Rail, the conductor bars are clamped in pairs by insulators against the web of the rail. Drawings below show the various insulators used for each application. Note that the No. MH-32 Tube is used to insulate the supporting bolt through the rail. This method withstands normal moisture conditions but where extreme moisture is

encountered, conductors shall be supported from split (individual) insulators. Drawings will be furnished showing installation details.

MonoRail and crane bridge electrification is set at a 7" gage while crane runway electrification is set at an 8" gage. See drawings below.



### CRANE RUNWAY ELECTRIFICATION



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings



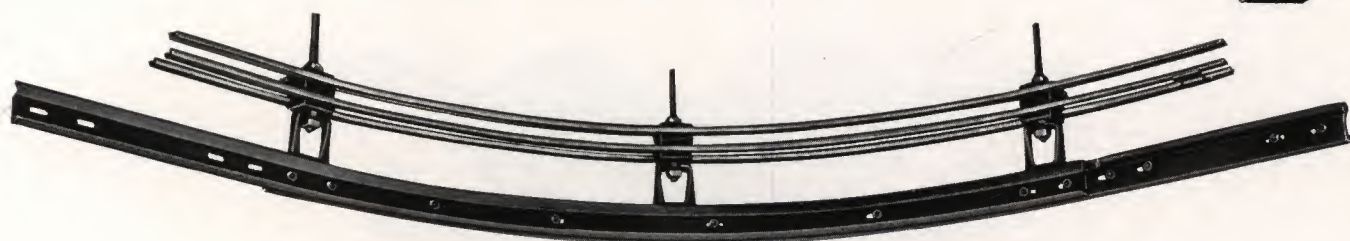


Fig. A

Electrified curve for use in either right or left turns. This curve has a splice on both ends for connections to track sections.

Conductor bars for curves are cut to the exact length required and are wired to the rail on the side of the curve on which they are to be mounted.

Conductor bars and insulators are shipped knocked-down and must be assembled on the rail as installed.

Mounting of the curved conductors is identical with that of straight track, details of which are given on the preceding page. The splice point on the conductor bars is at the center of the rail splice except when curves enter electrified switches.

Any curve listed on page 48 or those bent to special radius can be furnished with conductors. Electrified curves used in connection with switches, as detailed on pages 238 and 239, are listed as follows:

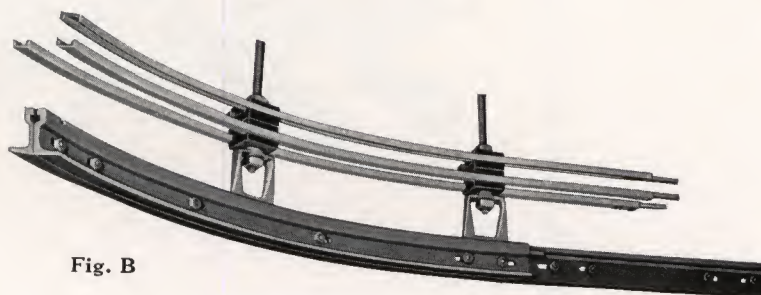


Fig. B

A right hand electrified curve for connecting switch with track running to the right. This curve has a splice on one end and is beveled on the other for switch connection.

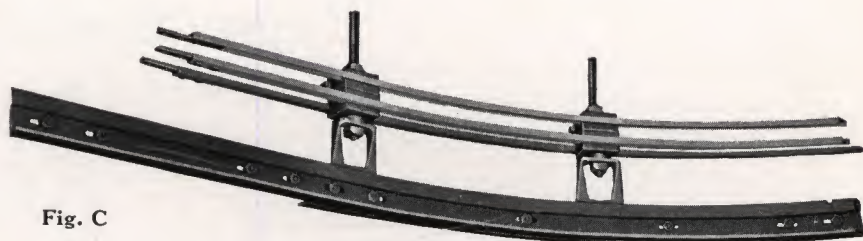


Fig. C

A left hand electrified curve for connection with switch where track runs to the left.

#### Electrified Curves for Track Connection

Fig. A—No. 21 Right or Left 48 lbs.

Fig. A—No. 25 Right or Left 61 lbs.

#### Electrified Curves for Glide Type Switches

Fig. B—No. 22 Right Hand 28 lbs.

Fig. C—No. 23 Left Hand 28 lbs.

Fig. D—No. 24 Right or Left 16 lbs.

#### Electrified Curves for Tongue Type Switches

Fig. B—No. 26 Right Hand 53 lbs.

Fig. C—No. 27 Left Hand 53 lbs.

Fig. D—No. 28 Right or Left 30 lbs.

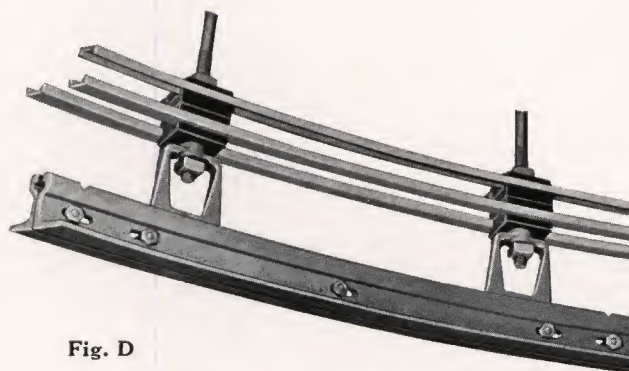
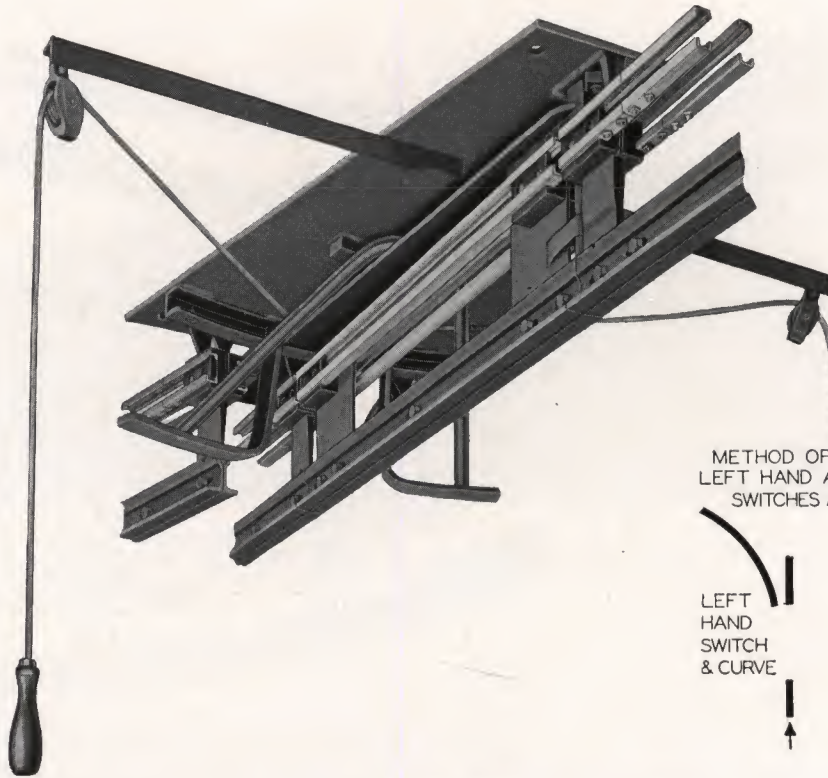


Fig. D

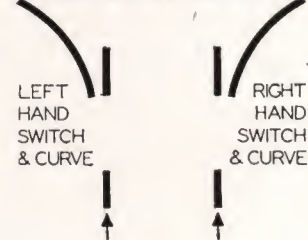
For use in either right or left hand positions to connect two switches. See pages 238 and 239 for charts showing various curves and switch groupings.

**NOTE:** *Weights on above curves are based on three conductor electrification. See dimensions on pages 238 and 239.*





METHOD OF DESIGNATING  
LEFT HAND AND RIGHT HAND  
SWITCHES AND CURVES



# No. 208 Electrified Two-Way Tongue Type Switch

## SPECIFICATIONS

Material specifications and details of construction and operation are identical with those of Tongue Switch No. 260 described on page 58. All wiring carried around the switch to connecting tracks by extra heavy rubber covered jumpers. Current is carried to the switch tongue by phosphor bronze spring fingers at the hinge.

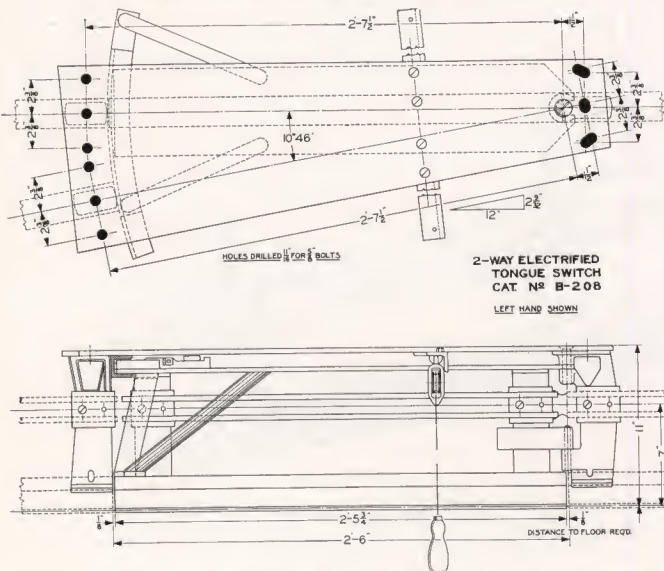
Conductor bars locked against creepage.  
Conductor bars on track connecting stubs equipped with brass connectors.  
No wiring in erecting switch.  
**Weight:** 110 pounds.  
**Finish:** Green Enamel.

Built into this switch are all the advantages of strength and ease of operation described on page 58 covering No. 260 Tongue Type.

Since the bus bar electrification is mounted so compactly and close in on the tongue of the switch, only a slight additional switch throw is required for clearance of trolley collectors.

Track curves for use with the electrified tongue switches are shown in the chart on page 238 which also illustrates the variety of standard switch groupings.

Conductor bars on the switch tongue are energized by the bronze spring fingers from the track conductor lines.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





# Electrified Tongue Type Switch

No. 209—Three-Way Switch

No. 210—Wye Switch

## SPECIFICATIONS

Material specifications and details of construction and operation are identical with those of Tongue Switch No. 261 described on page 59. All wiring carried around the switch to connecting tracks by extra heavy rubber covered jumpers. Current is carried to the switch tongue by phosphor bronze spring fingers at the hinge.

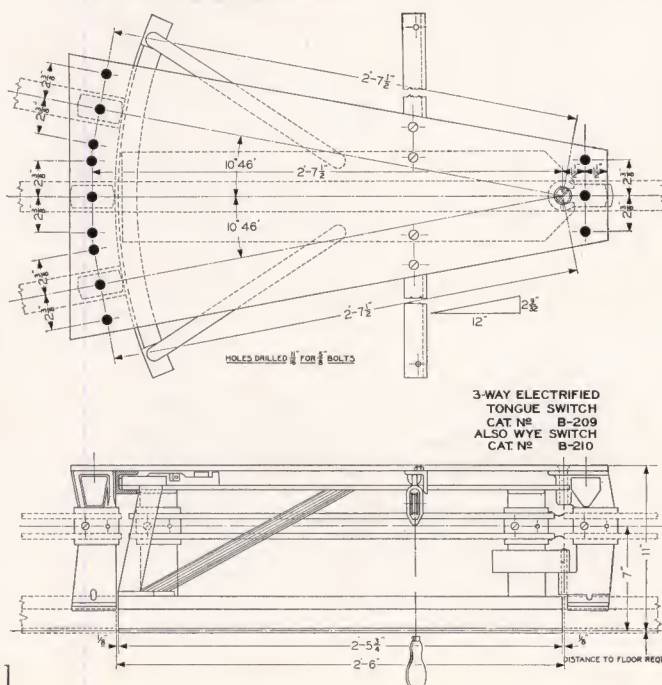
Conductor bars locked against creepage. Conductor bars on track connecting stubs equipped with brass connectors. No wiring in erecting switch. **Weight:** No. 209 3-Way Switch 125 lbs. No. 210 Wye Switch 118 lbs. **Finish:** Green Enamel.

The same positive latching feature of the three-way tongue switch provides a definite stop at the intermediate position requiring another pull on the rope to move the tongue to the right or left connecting tracks. This thereby assures quick alignment with the middle track.

Both the Three-Way and the Wye type electrified tongue switches are assembled on the same frame. On the Wye switch the center hanger is replaced by a permanent guard in order to prevent trolleys from leaving the tongue if stopped at this position.

All open ends are safely guarded against trolleys leaving the track at switch connections.

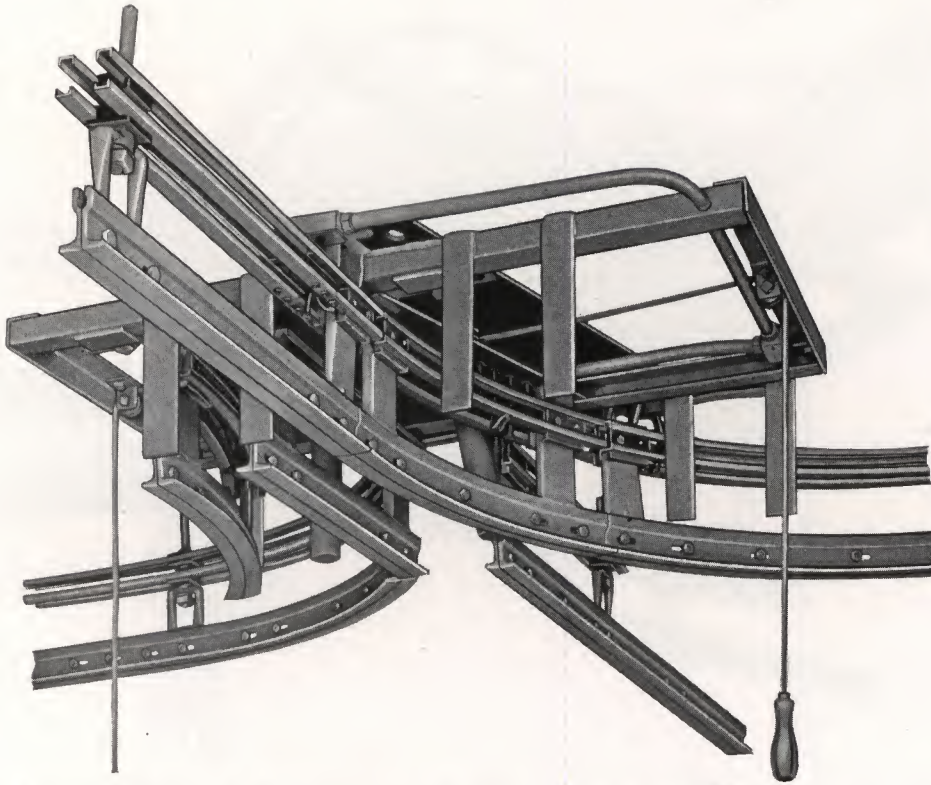
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*











## No. 297 Electrified Three-Way Glide Type Switch

### SPECIFICATIONS

Material specifications, and details of construction and operation are identical with those of Glide Type Switch No. 294 described on page 61.

All switch wiring carried in standard conduit and fittings. All conductors on shift section are energized by commutator set in ebonite between switch plates.

Conductor bars locked against creepage.

Conductor bars on track connecting stubs equipped with brass connectors.

No soldering or wiring necessary in erecting switches.

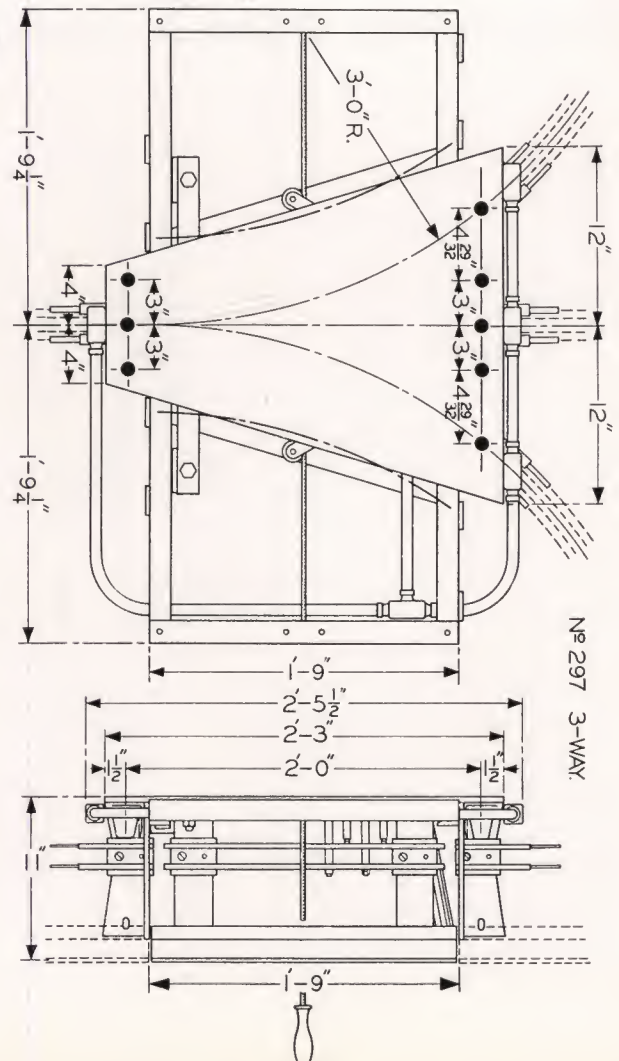
**Weight:** 243 pounds.

**Finish:** Green Enamel.

All the advantages of compactness, ease of operation and rugged construction inherent in American MonoRail glide types are also found in this three-way switch for trolley travel to the right, left or straight through.

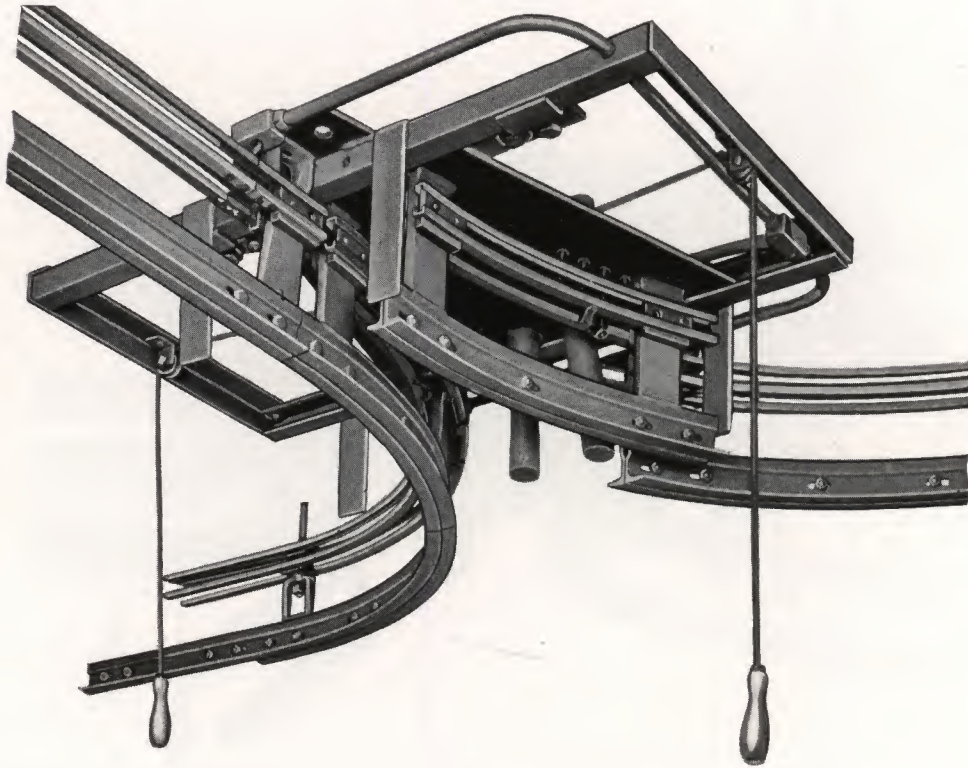
Standard bus bar electrification is applied to this switch. This method, since it allows the use of four conductors, adapts the system to any current characteristics in general use.

Switches can be arranged in most track layouts to prevent reversal of collectors which would change polarity where poly-phase current is used. No special field wiring or transformers are required.



*Dimensions given on this page are for estimating purposes only.  
Certified blueprints will be furnished for working drawings.*





## No. 298 Electrified Wye Glide Type Switch

### SPECIFICATIONS

Material specifications, and details of construction and operation are identical with those of Glide Type Switch No. 295, described on page 62.

All switch wiring carried in standard conduit and fittings. Switches completely wired ready for erection.

Conductor bars on track connecting stubs equipped with brass connectors.

Conductor bars locked against creepage.

All conductors on shift section are energized through commutator set in ebonite between switch plates.

**Weight:** 194 pounds.

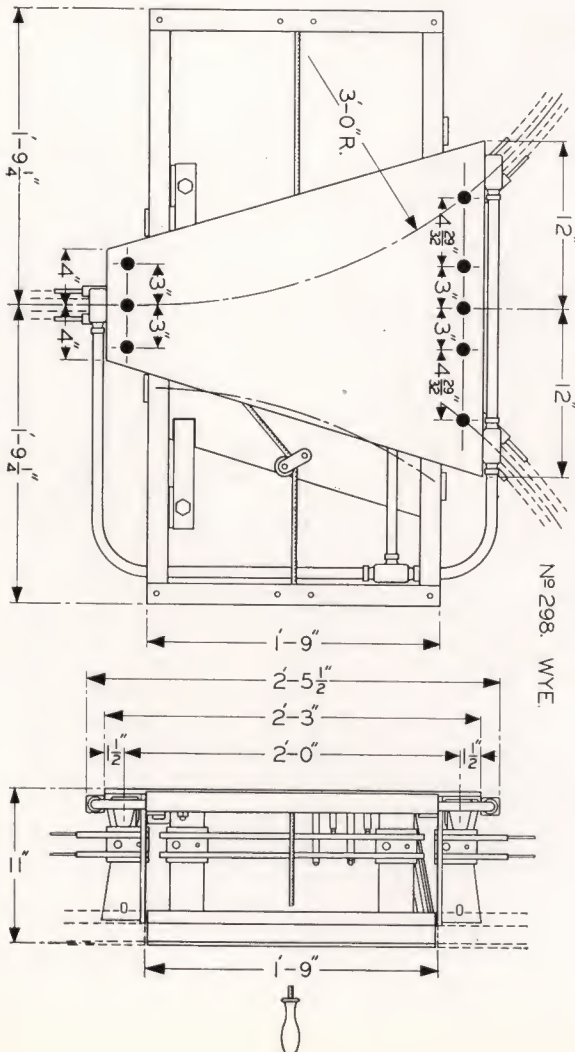
**Finish:** Green Enamel.

Where space is limited and track arrangement calls for connection to the right and to the left this wye switch will meet such requirements under closer headroom and with half the switch throw obtained in other equipment.

The close grouping of rigid conductors together with the compact design of the switch itself makes these space saving features possible.

Current is carried around the switch through standard conduit and fittings which follow around the frame to the radiating tracks. Shift sections are energized by a special commutator so that service can be obtained when trolleys are passing through the switch. All of the standard safety features apply to this switch.

*Dimensions given on this page are for estimating purposes only.  
Certified blueprints will be furnished for working drawings.*







# No. 320 Electrified Cross Track Switch

## SPECIFICATIONS

Material specifications and details of construction are identical with those of Cross Track Switch No. 317 described on page 63.

Conductor bars mounted on swing bar to support collector shoes.

Current not regularly carried to conductors on swing bar.

Conductor bars and adjoining tracks are attached directly to switch hangers.

Conductors on adjoining tracks must be wired with jumpers around switch.

**Weight:** 70 pounds.

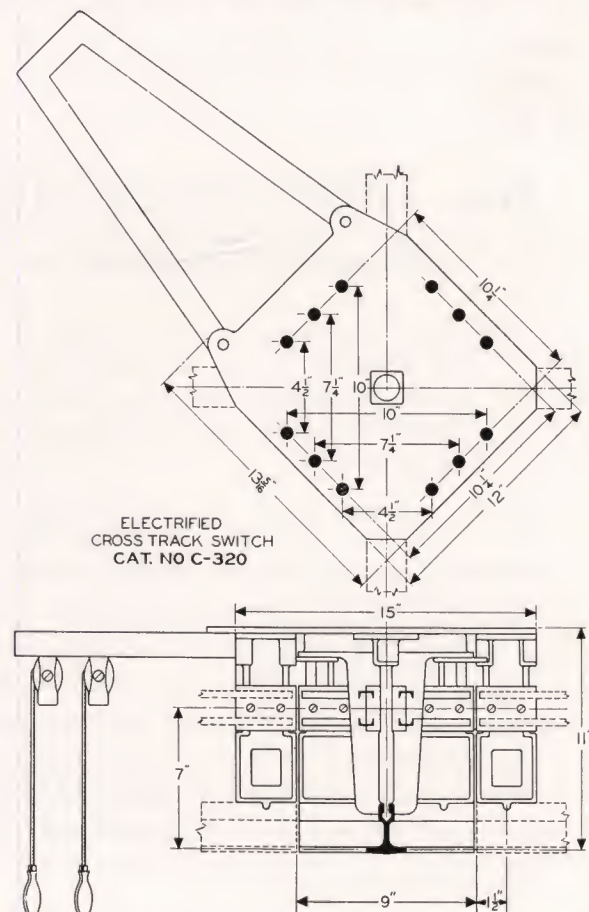
**Finish:** Green Enamel.

Through travel on two lines of track meeting at right angles can be obtained by means of the cross track switch.

This is normally accomplished in an electrified system without current in the swing bar which is furnished with conductor bars merely to support the collector shoes while trolleys pass through the switch.

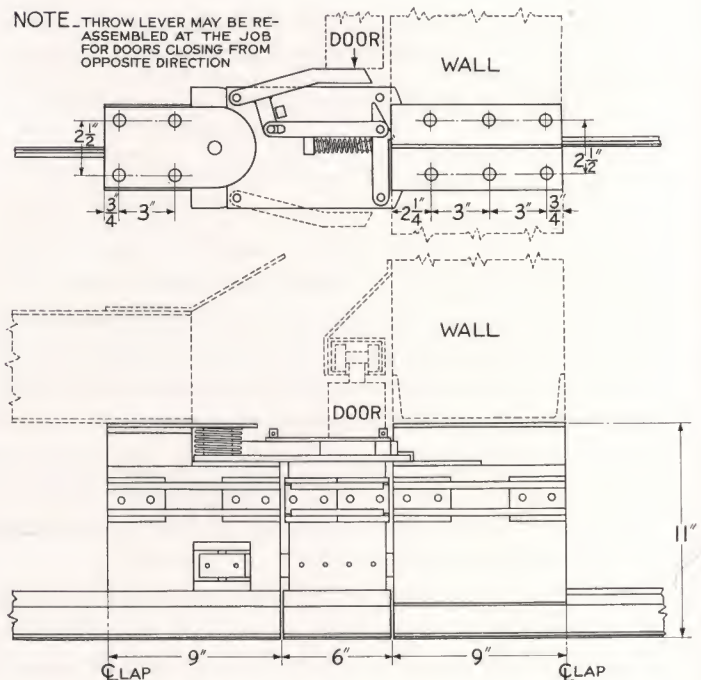
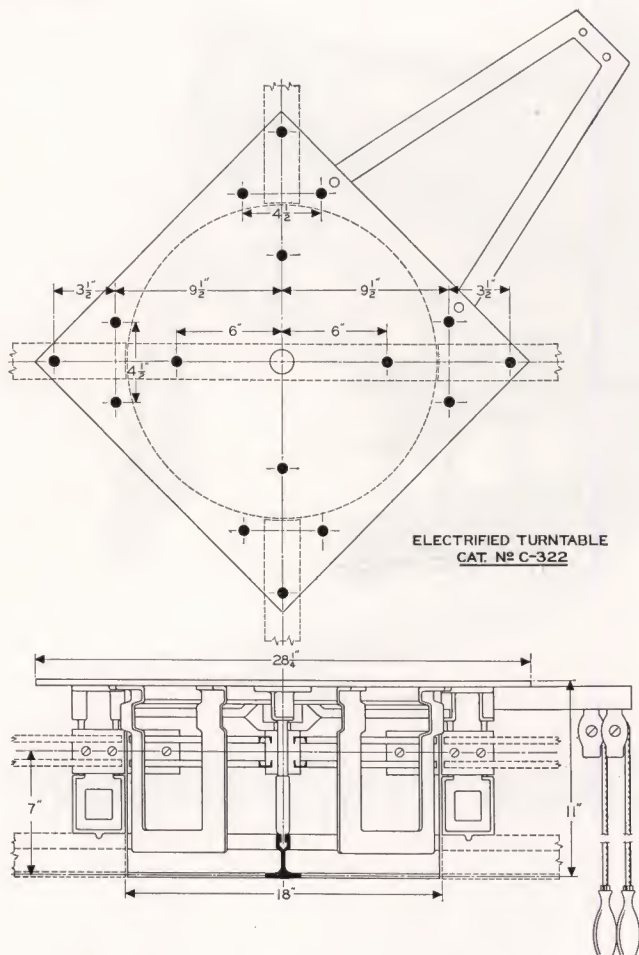
Systems requiring through service can, of course, be worked out but careful consideration must be given to the possibility of change in polarity and provisions made for such contingencies.

All the advantages of No. 317 Switch as described on page 63 are found in the electrified switch, the only difference being the added depth to take care of bus bars for electric current.



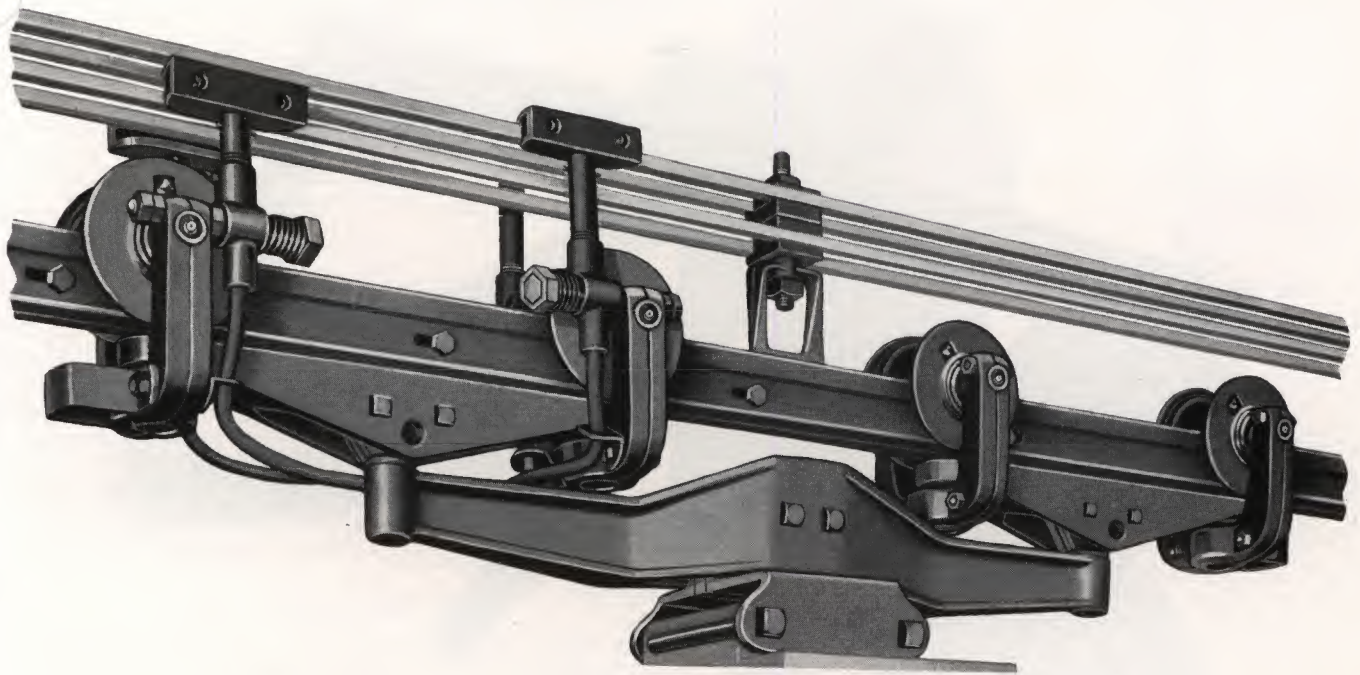
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



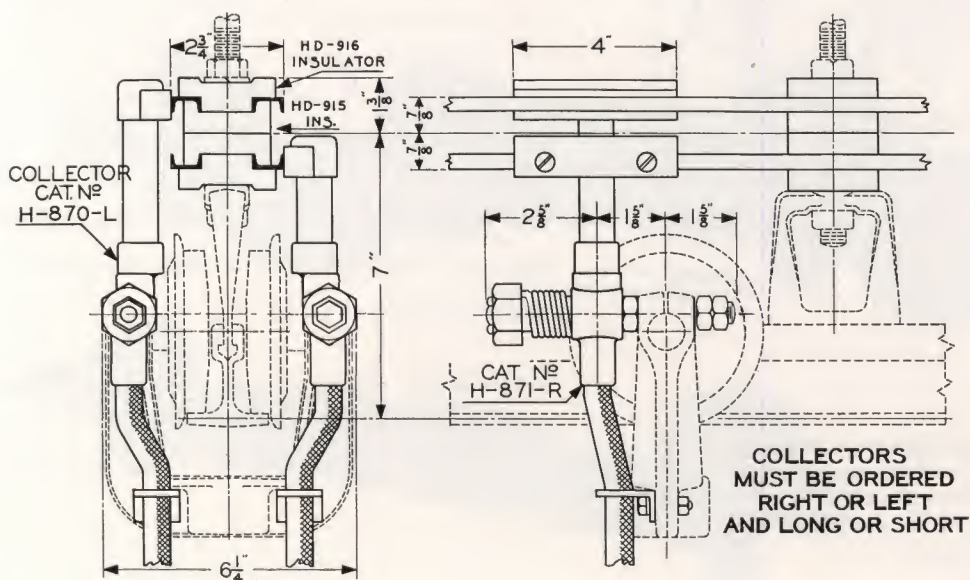


## Electrified MonoRail Trolleys

American MonoRail current collectors are of hard copper alloy of the shoe type. The contactor shoe is set in a fiber housing which is attached to the top of a fiber tube or shaft through which the wiring is carried. This tube at its lower end threads into a malleable hinge mounted upon a one-half inch hinge bolt. An

adjustable coil spring around the bearing sleeve maintains the proper contact between the shoe and the conductor bar.

Collectors of the sliding shoe type have a large contact area and are fully shrouded in a bakelite housing.

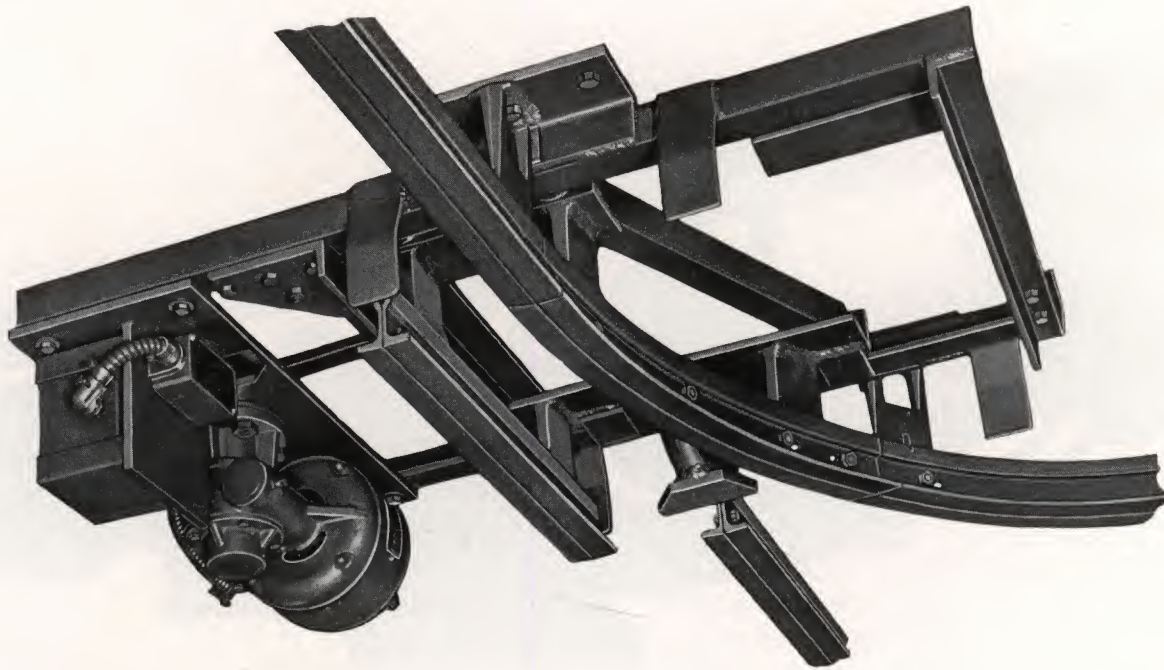


This method of collection, the same as used in high speed railway electrification, assures polished conductors and collectors at all times and thereby reduces arcing.

Collectors may be mounted on all standard American MonoRail trolleys except No. 188 and No. 189. Each yoke will accommodate two collectors. Each collector is mounted at the top of the trolley yoke to assure accurate relation to the conductor bar when trolley passes around curves.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*

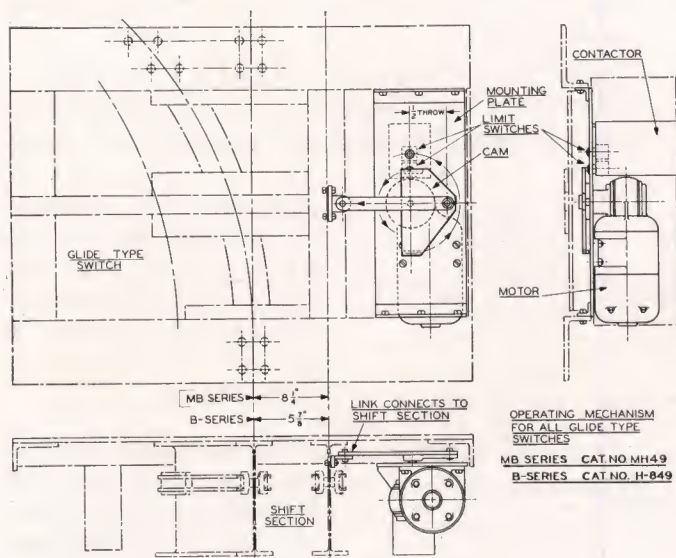




# Motor Operation For MonoRail Switches

No. 849—For Standard Line Switches

No. MH-49—For RailMaster Switches



Drawing above shows application of motor operation to the RailMaster glide type switch. Similar application is made to Standard Duty glide switches as well as tongue type switches of both lines.

Operation of a two-way MonoRail switch from remote points or from power driven cab units can be easily accomplished by means of a gear head motor as illustrated above and in the accompanying drawing.

Switch throw is positive from a rigid arm anchored to actuating cam. This cam by passing over limit switch buttons also determines the extent of throw for perfect track registry and is adjustable at all times through the motor brake.

Installation is extremely simple. Control possibilities are practically unlimited even to the extent of completely automatic operation.



# American MonoRail Cranes

In the design of American MonoRail Cranes, dead weight is kept at the lowest point consistent with strength. This means less effort expended in moving the bridge itself which offers the great advantage of maximum live load capacity.

## EASE OF HANDLING

Two factors determine the easy handling of all American MonoRail Cranes. First, the elimination of friction through the use of large diameter wheels mounted on precision ball bearings and through self-aligning bearings seated in all trolley yokes. Second, the minimum dead weight of crane being handled. Tests prove that only a 14 pound effort is required to move a one-ton load when suspended from a 30-foot American MonoRail Crane.

## SMOOTH TRAVEL

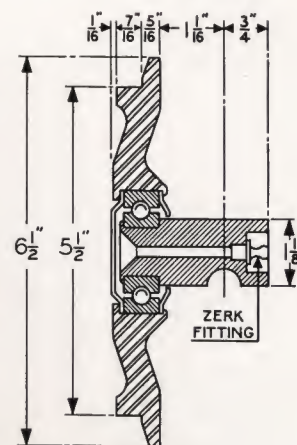
Standard MonoRail, Truss Rail or Girder Rail, with the 18 inch lap splice, furnish smooth runways for crane wheels. Freedom from jolt or jar at track connections eliminates vibration to building or load on crane.

## STRENGTH

Drop forged wheels, high grade malleable yokes and alloy steel load bars, combined with fabricated steel trucks and Girder Rail bridge, assemble into a unit having a wide margin of safety with stiffness to permit lifting and carrying loads over long spans.

## SAFETY

Automatic safety stops at all points prevent possibility of trolleys rolling off open tracks or bridges of American MonoRail cranes.



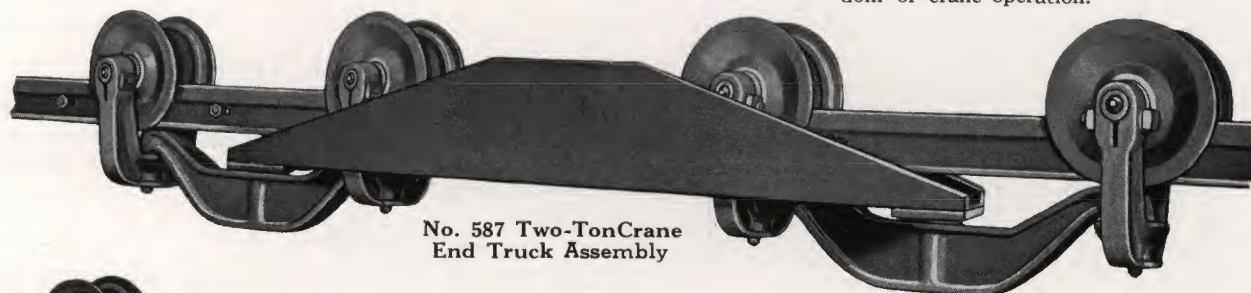
**No. 539 Crane Wheel**

Large diameter forged wheels with hardened treads assure the quick starting and easy rolling features of American MonoRail Cranes. Precision ball bearings are lubricated through the heavy axles by pressure system.



**No. 521 Crane Trolley**

No. 561 heavy malleable yokes, with No. 539 wheels, carry trucks on special self-aligning bearings for greater freedom of crane operation.



**No. 587 Two-Ton Crane  
End Truck Assembly**

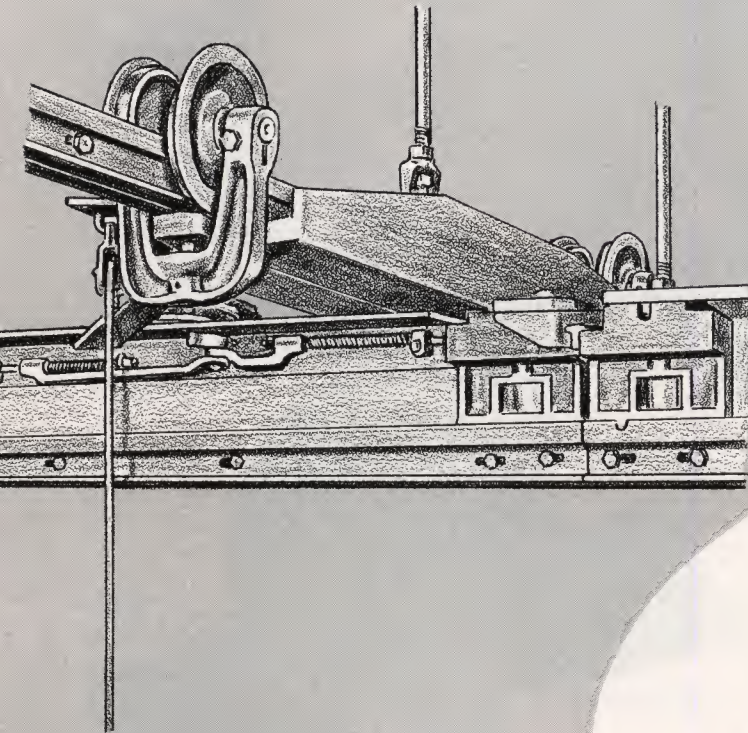
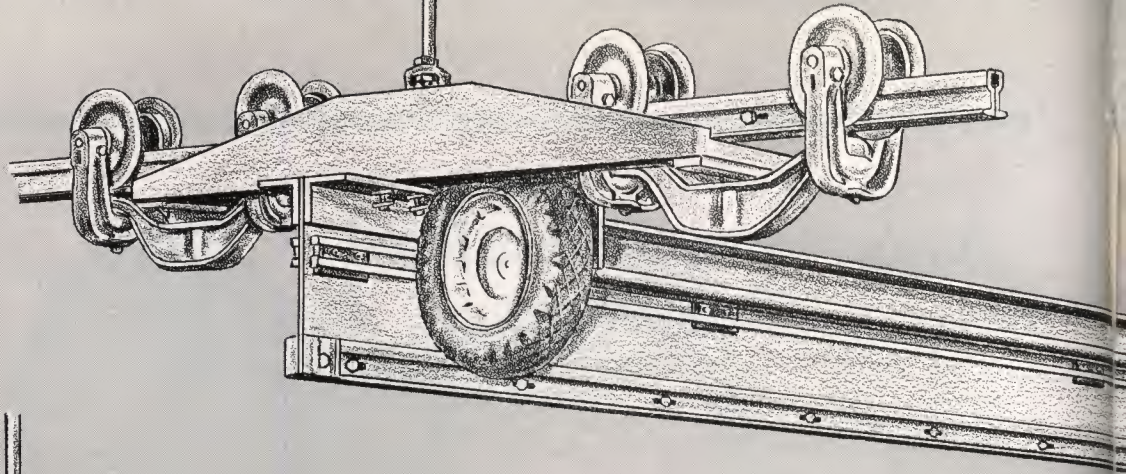


**No. 586 One-Ton Crane  
End Truck Assembly**

Illustrations show the assembly of crane trucks and trolleys. Note above that the ends of Load Bar No. 519 are carried on the self-aligning bearings seated in the trolley yoke. Ends of Crane Truck No. 586 illustrated on the left are carried directly on the self-aligning bearings.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





**SAFETY  
INTERLOCKS**

# AMERICAN MONORAIL Crane Advantages

## Ease of Handling

Elimination of friction through the use of large diameter wheels with precision bearings and through special self-aligning bearings seated in the trolley yokes which carry the crane trucks, create the remarkably easy handling of American MonoRail cranes. Only a 14 pound effort is required to move a 1-ton load on a 30 ft. crane bridge.

## Smooth Travel

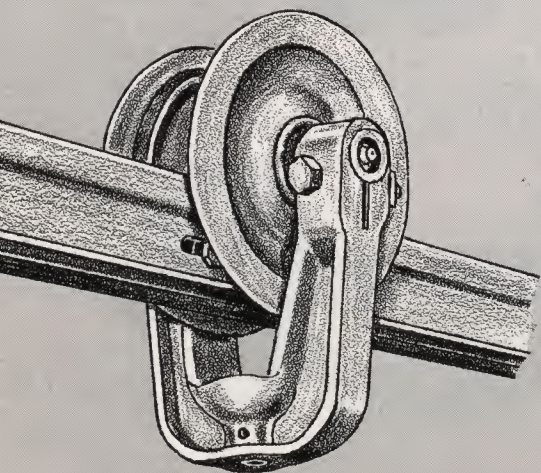
The overlapping track splice feature of American MonoRail track furnishes smooth runways for crane travel. Freedom from jolt or jar at track connections eliminates vibration to building or load on crane.

## Strength

Dead weight is kept at a minimum for greatest live load capacity by the use of forged wheels and fabricated steel trucks. Girder rail, used as the bridge member, offers a wide margin of safety with stiffness to permit lifting and carrying loads over maximum spans.

## Safety Interlocks

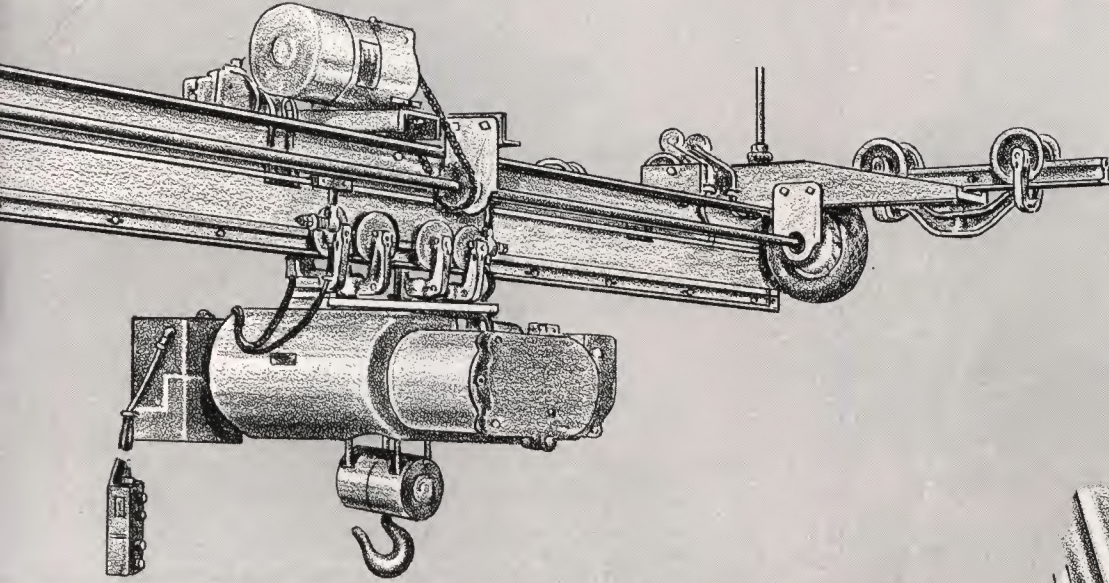
Simple, fool-proof design assures accurate register of crane bridge with connecting tracks or connecting cranes. Ex-



**LARGE DIAMETER  
WHEELS**



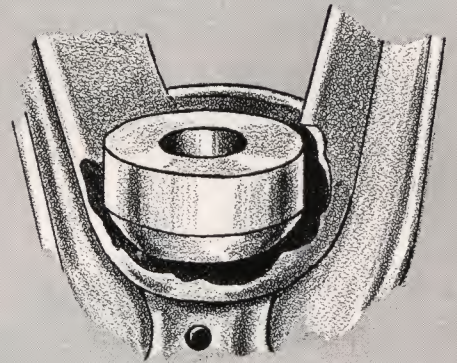
# FREE MOVING CRANES



clusive safety features eliminate any possibility of trolleys rolling off open ends since cranes cannot be moved from interlock connections until the safety stops are set. Electric service is maintained through the track connections without special apparatus.

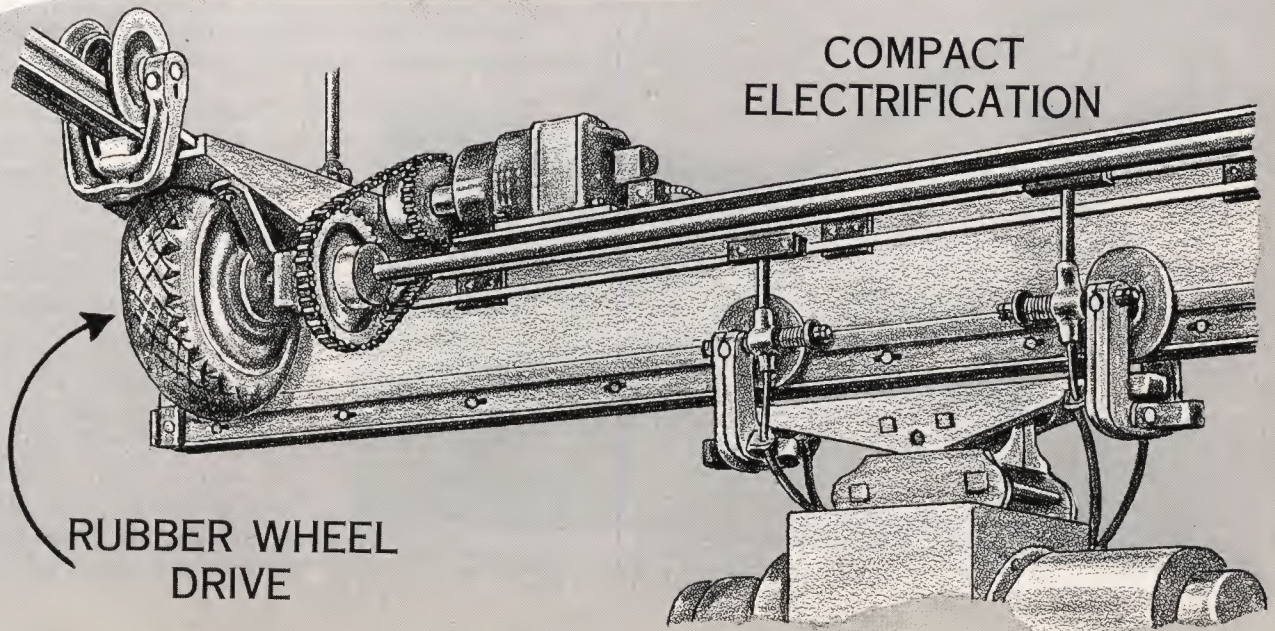
## Power Operation

Operation of electric hoist on crane bridge is obtained through compact bus bar electrification on hand pushed or power driven cranes. For heavy loads or accurate spotting, power operated cranes offer many advantages, Rubber drive wheels, mounted on end trucks and contacted against the bottom of the runways, are attached to a squaring shaft with sprocket and chain to electric gear head motor. Illustrations on pages 172 and 173 explain many features of the exclusive MonoTractor drive.



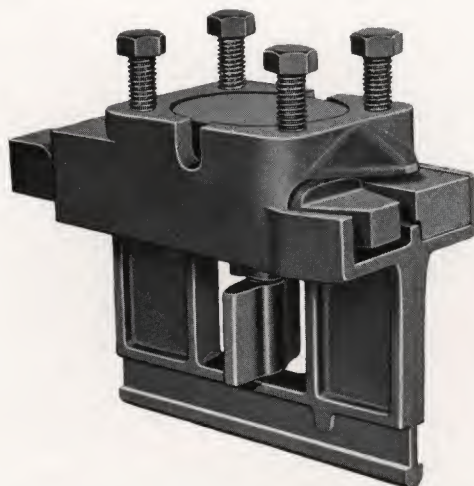
SELF-ALIGNING  
BEARINGS

COMPACT  
ELECTRIFICATION



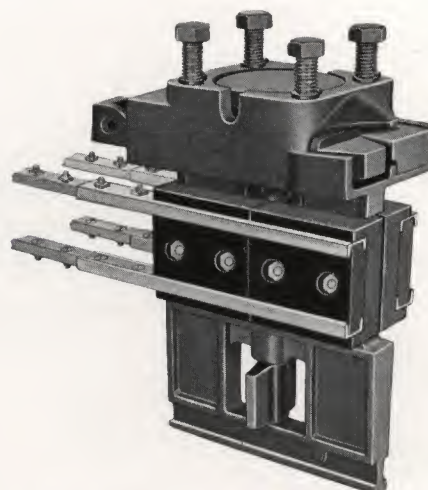
RUBBER WHEEL  
DRIVE





**No. 513 Connecting Interlock**

This interlock is used for connecting a non-electrified spur track to a non-electrified crane bridge. It connects with No. 515 Crane Interlock shown below.



**No. 850 Connecting Interlock**

This interlock connects electrified spur track with electrified cranes. It is used with No. 930 Electrified Crane Interlock. Stub conductors are furnished with brass connectors for attaching to track conductors.



**No. 525 Auxiliary Stop Latch**

Where a crane bridge longer than 10 feet interlocks on one end only, the Auxiliary Stop Latch No. 525 should be used for latching the bridge at the opposite end.

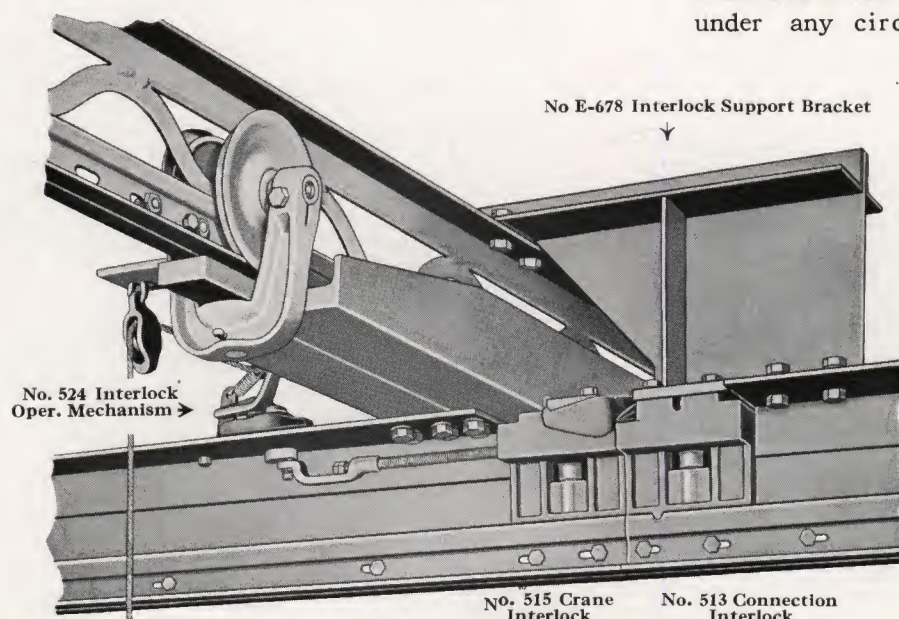
## Standard Crane Interlock

American MonoRail Crane Interlocks operate with extreme ease and complete safety. The latch bolt in the crane interlock, when set for operation by rope pull, is held in place by a keeper gate. This gate, upon reaching the connecting interlock is raised by a cam on the connecting interlock, releasing the bolt into the connecting interlock. By means of a rotating head in the connecting interlock, this latch bolt motion projects a second latch bolt from the connecting interlock into the crane interlock, thereby opening the safety stops for passage of trolley wheels across the connection.

From this it can be seen that it is absolutely impossible under any circumstances to release the safety stops unless the crane is locked in alignment with the connecting interlock.

A crane is unlatched by pull on the opposite rope which returns the latch bolts and the safety stops to their original positions. Cranes cannot be unlatched if a trolley wheel obstructs action of the safety stops which protect open track ends.

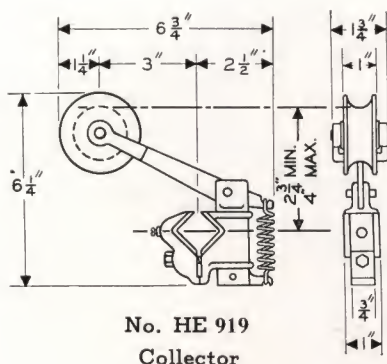
A track locking lug, as described in detail on page 55, prevents creepage of track section, thereby eliminating interference or rough joints. See page 254 for details of clearance as well as proper methods for supporting the connecting interlock to assure accurate register.



**No. 515 Crane Interlock**

**No. 513 Connection Interlock**





## BRIDGE ELECTRIFICATION

American MonoRail crane bridges are electrified with the same rigid bus bar system as described on page 85. Bakelite insulator blocks for mounting bus bar on the bridge allow ample clearance between conductor bars and web of crane beam. Hoist or carrier unit operating on the bridge collects current with the same shoe type collectors illustrated on page 97. Current is therefore available at any point in a system which includes cranes and interlocking spur tracks.

## CRANEWAY ELECTRIFICATION

Two methods described below are available for applying current to the bus bars on crane bridges.

## BUS BAR ELECTRIFICATION

Where there is sufficient headroom to allow mounting of rigid bus bars above the craneway track, standard shoe type collectors can be mounted on the crane end trucks, thereby furnishing compact, rigid wiring throughout the entire crane system. See illustration below for method of mounting collectors as well as clearance requirements.

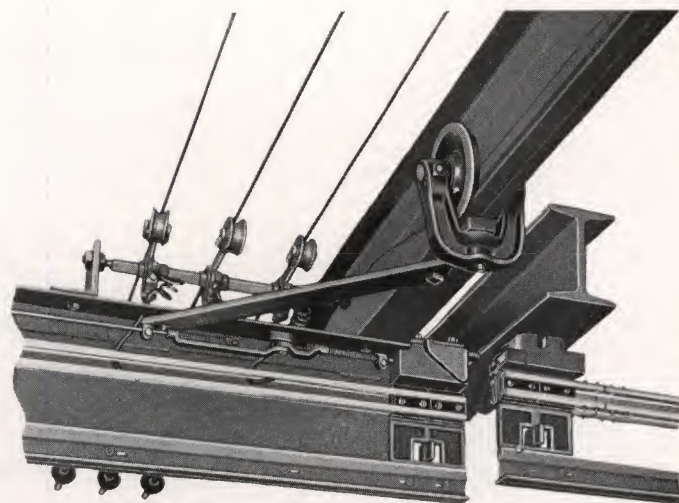
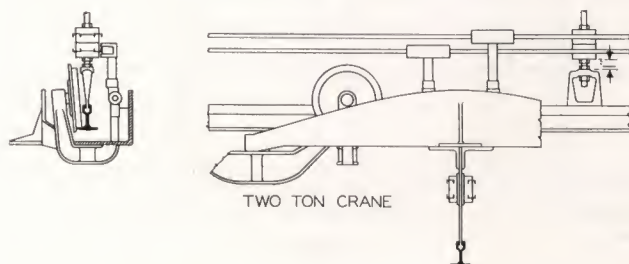


Fig. 103-A

Illustrates method of mounting No. 919 Trolley Collectors on crane bridge for copper wire craneway electrification.



No. 923  
Strain Insulator



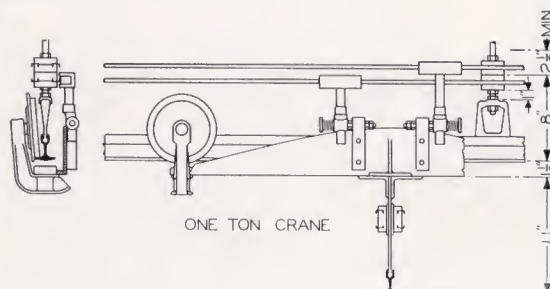
No. 924  
Insulator for  
Wire Clamp



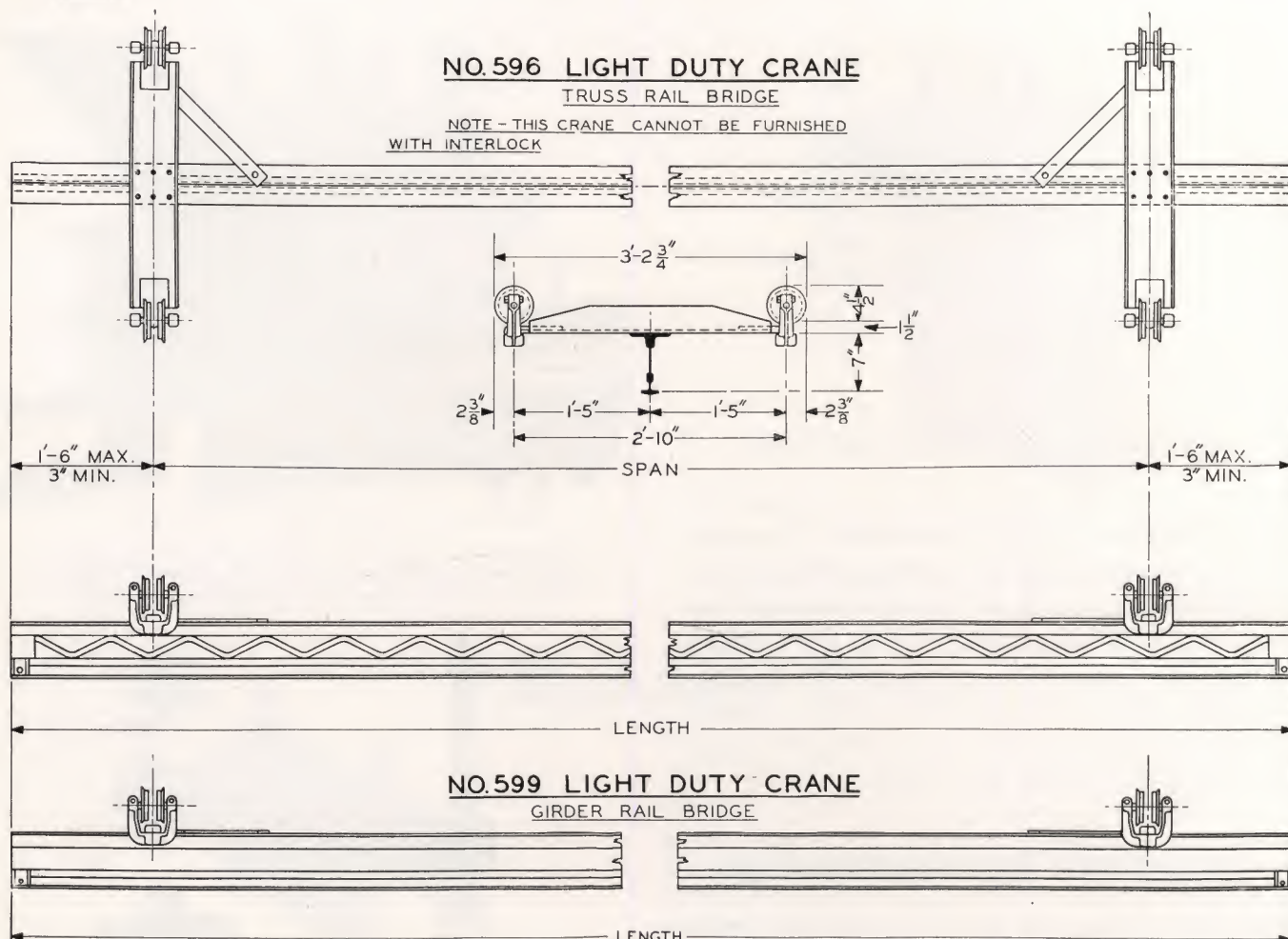
No. 925  
Wire Clamp

## COPPER WIRE ELECTRIFICATION

Hard drawn copper wires are mounted close in on top of the crane bridge by means of the insulators and clamp illustrated on this page. Current is brought to the crane bridge by grooved wheel trolley collectors carried on an insulated arm bracketed to the crane bridge.







No. 596 CRANE—TRUSS RAIL BRIDGE

Overall Length	Capacity	Trolleys	Shipping Weight
10'	1000	No. 150	310
10'	1500	No. 157	315
12'	750	No. 150	340
12'	1250	No. 157	345
14'	500	No. 150	365
14'	1000	No. 157	370
16'	500	No. 150	395
16'	750	No. 157	400

No. 599 CRANE—GIRDER RAIL BRIDGE

10'	1000	No. 150	340
10'	1500	No. 157	345
12'	750	No. 150	375
12'	1500	No. 157	380
14'	750	No. 150	410
14'	1250	No. 157	415
16'	750	No. 150	445
16'	1000	No. 157	450

NOTE—Maximum overhang for No. 596 and 599 Cranes—1'6", Minimum—3"

Bridge depth for both cranes—7"

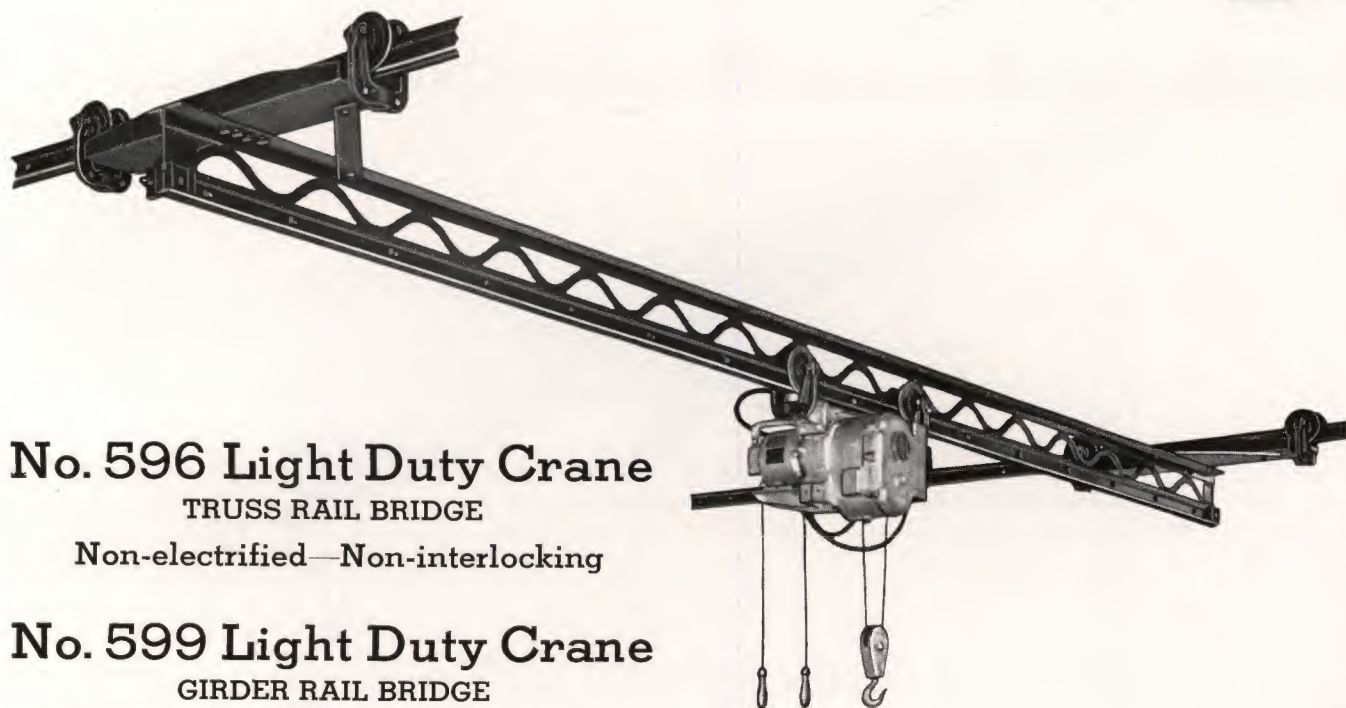
No. 596 and 599 Cranes cannot be furnished with standard electrification.

No. 599 Crane can be equipped with non-electrified interlocks.

CRANE CAPACITY IS FOR TOTAL LOAD LISTED EXCLUSIVELY OF TROLLEY AND HOIST.

Dimensions given on this page are for estimating purposes only. Certified prints will be furnished for working drawings.





## No. 596 Light Duty Crane

TRUSS RAIL BRIDGE

Non-electrified—Non-interlocking

## No. 599 Light Duty Crane

GIRDER RAIL BRIDGE

Non-electrified—Non-interlocking

### SPECIFICATIONS

**End Trucks:** No. 595 Heavy Steel Angle.

**Trolleys:** Listed in schedule on page 104.

**Bearings:** New Departure precision ball.

**Runways:** Standard MonoRail, Truss or Girder Rail.

**Lubrication:** As specified for trolleys listed.

**Electrification:** Tagline only for bridge.

**Finish:** Green Enamel.

The two cranes listed on this page were designed to carry loads under a ton on short span bridges. The extremely light weight construction permits fast movement on American MonoRail runways of standard track, truss or girder rail.

Standard trolleys furnished with these cranes assure continuous, easy-rolling service due to precision bearings and flame hardened wheel treads.

Because of the 7" bridge depth neither crane can be furnished with standard bus bar electrification. Tag line methods should be used for service of electric hoist on the bridge. Crane No. 599 can be equipped for non-electrified interlocks. Add 50 lbs. to weight listed when interlocks are furnished.

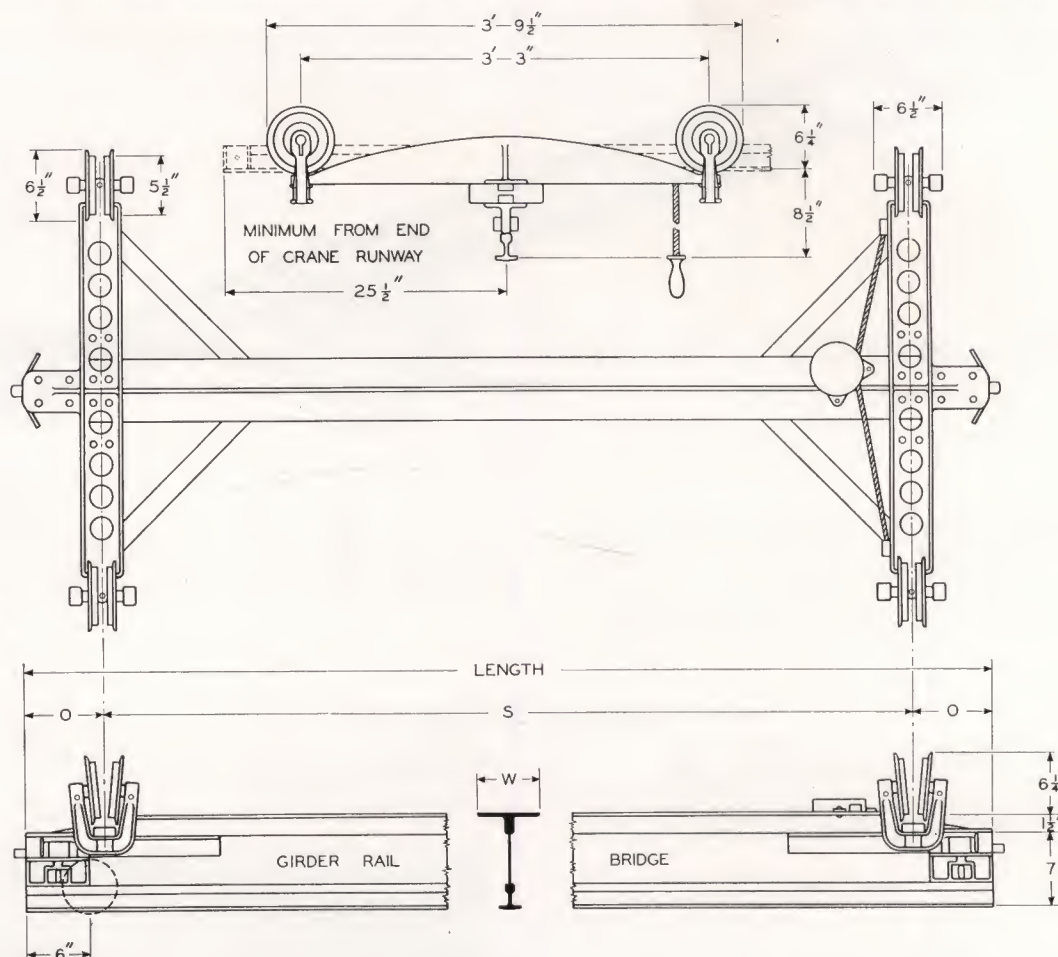
For loads over one ton or for longer span bridges than listed in the schedule on page 104, use the cranes shown in the following pages.



Light Duty Crane serves rod storage.



# No. 543 American MonoRail One-Ton Crane

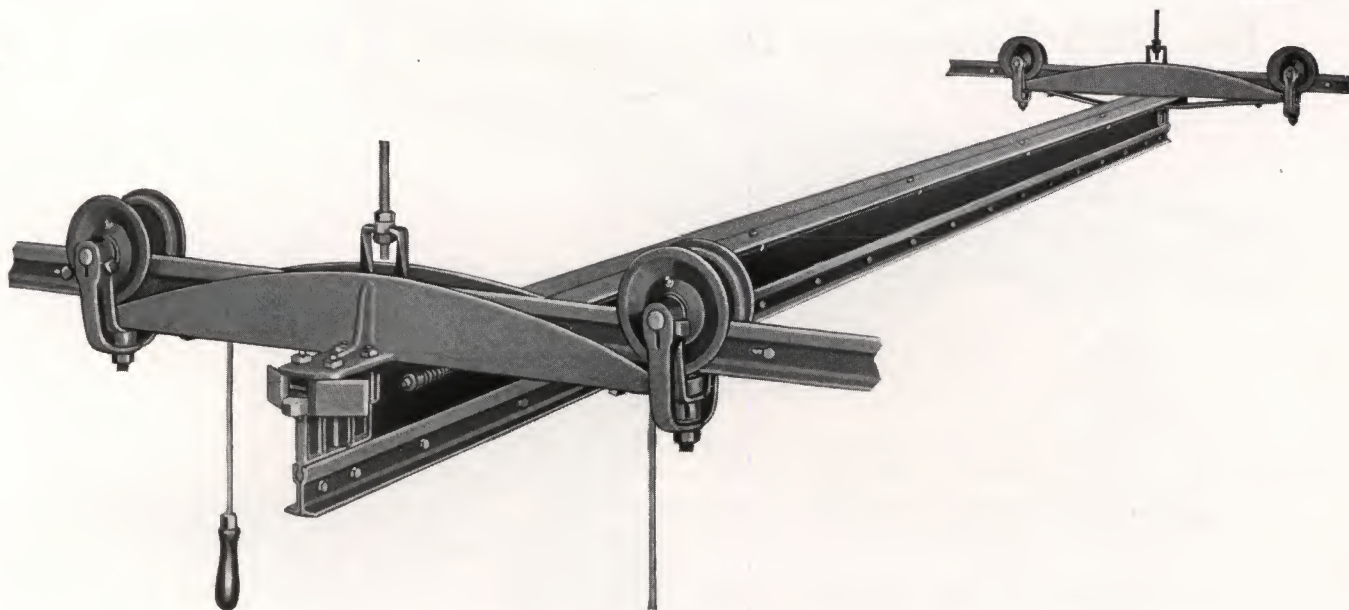


DIMENSIONS			No. E-542 NON-INTERLOCKING		No. 543 INTERLOCKING	
Overall Length	Depth Bridge	Maximum Overhang	Weight	Estimated Shipping Weight	Weight	Estimated Shipping Weight
10'	7"	12"	315	365	342	422
12'	7"	14"	349	389	360	440
14'	7"	16"	377	417	391	471
16'	7"	18"	411	451	422	502
18'	7"	21"	445	485	452	532
20'	9"	24"	515	555	545	625
22'	9"	27"	540	590	580	660
24'	9"	30"	570	620	611	690
26'	11"	34"	703	743	748	828
28'	11"	38"	744	784	789	869
30'	11"	42"	786	826	831	911
THREE TRUCK CRANES						
32'	11"	48"	888	948	970	1030
34'	11"	48"	923	983	1005	1065
36'	11"	48"	958	1020	1040	1100
38'	11"	48"	993	1055	1075	1135
40'	11"	48"	1028	1090	1110	1170
42'	11"	48"	1063	1123	1146	1206
44'	11"	48"	1098	1158	1181	1241
46'	11"	48"	1133	1193	1216	1276
48'	11"	48"	1168	1228	1251	1311
50'	11"	48"	1203	1263	1286	1346

CRANE CAPACITY IS FOR TOTAL LOAD EXCLUSIVE OF TROLLEY AND HOIST. See page 254 for details of clearance and interlocks.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 542 One-Ton Crane—Non - Interlocking

## No. 543 One-Ton Crane—Interlocking

### SPECIFICATIONS

**Crane Bridge:** American Girder Rail.  
**Crane End Trucks:** No. 586, Heavy Steel Angle.  
**Wheels:** No. 539 Drop Forged, Hardened Tread.  
**Wheel Yokes:** No. 561, Heavy malleable castings.  
**Bearings:** Heavy duty New Departure precision ball.

**Crane Runway:** Standard MonoRail, Truss or Girder Rail.  
**Lubrication:** Wheels lubricated through axles with Zerk fitting.  
**Interlock:** May be equipped to interlock with connecting track or other cranes.  
**Finish:** Green Enamel.  
**Dimensions:** See table and sketch on opposite page.

Where loads must be handled over wide areas these free-moving hand operated cranes provide the most efficient, low-cost means.

The minimum dead weight of the crane itself allows movement of live loads up to its rated capacity which is well within a conservative factor of safety. This is an important basis for judging crane performance.

American MonoRail cranes start easily—a 14 pound effort is all that is required to start one ton loads even when suspended at the end of the bridge.

Large diameter wheels with precision ball bearings provide the easy rolling qualities that afford a great saving in man power where cranes are used continuously.

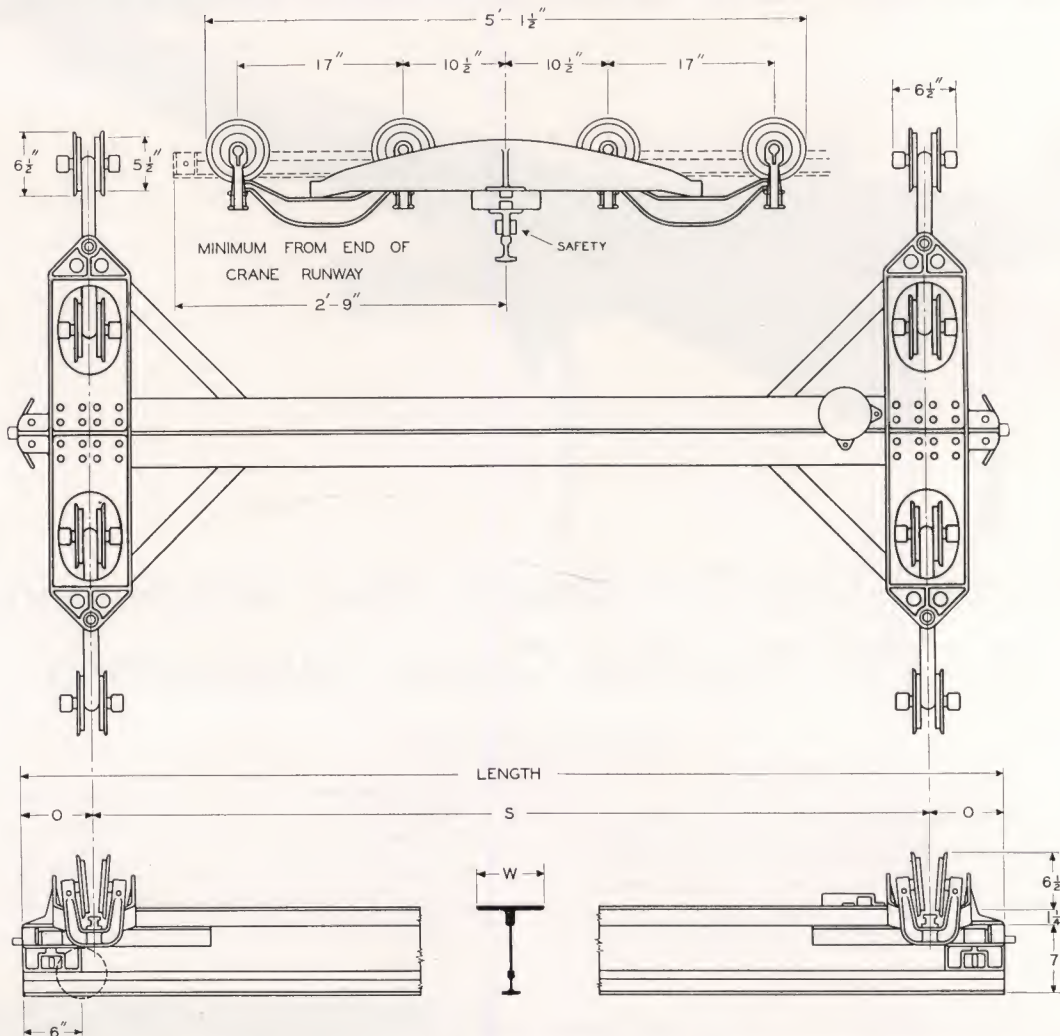
Cranes may be furnished with interlocking device to register accurately with connecting tracks or other cranes. Automatic safety stops protect all open rail ends when cranes are not latched in position.



Free moving crane aids in pouring metal.



# No. 553 American MonoRail Two-Ton Crane

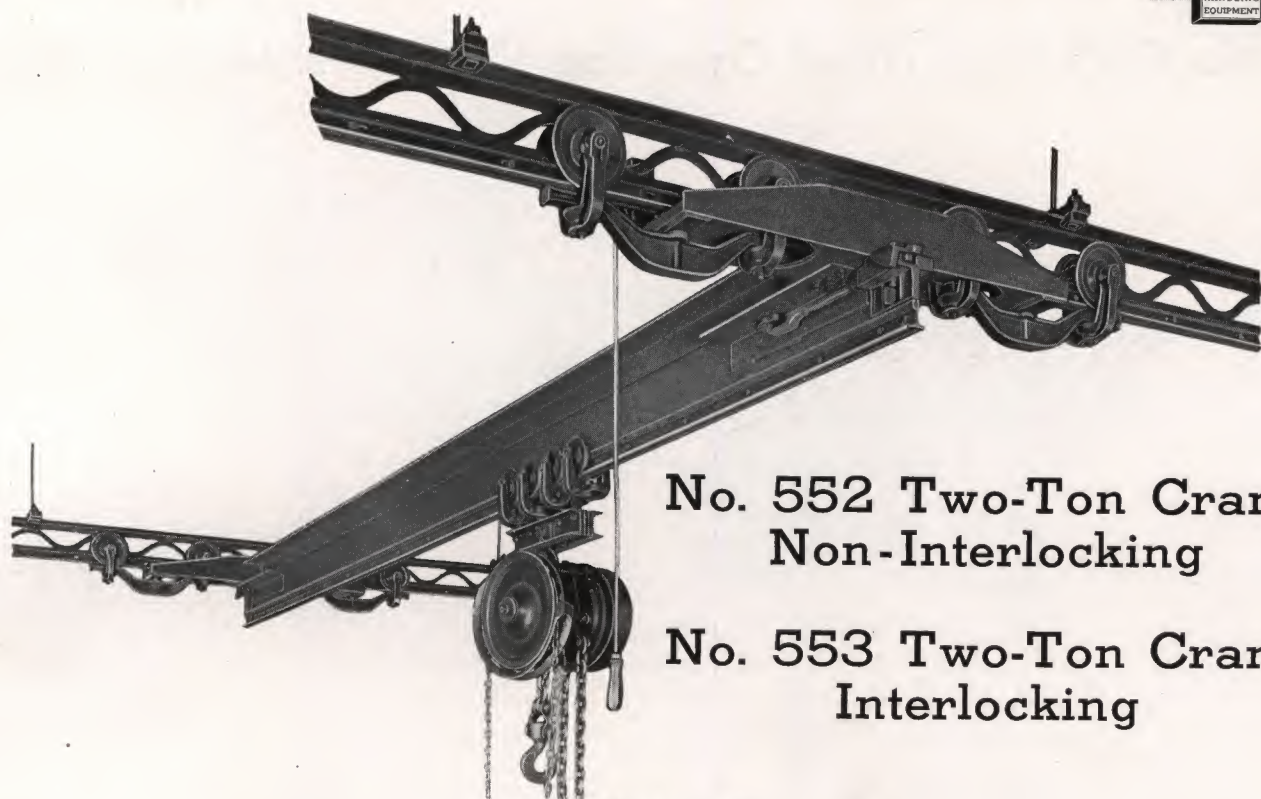


DIMENSIONS			No. E-552 NON-INTERLOCKING		No. E-553 INTERLOCKING	
Overall Length	Depth	Maximum Overhang	Weight	Estimated Shipping Weight	Weight	Estimated Shipping Weight
10'	7"	12"	449	479	470	550
12'	9"	14"	495	525	560	640
14'	9"	16"	579	609	622	702
16'	9"	18"	622	652	664	744
18'	11"	21"	728	758	772	852
20'	11"	24"	777	807	821	901
22'	13 1/2"	27"	826	856	870	950
24'	13 1/2"	30"	875	905	919	999
26'	13 1/2"	34"	925	955	969	1049
28'	13 1/2"	38"	975	1010	1020	1100
30'	13 1/2"	42"	1025	1050	1070	1150
THREE TRUCK CRANES						
32'	11"	48"	1084	1114	1108	1188
34'	11"	48"	1125	1155	1150	1230
36'	11"	48"	1167	1197	1191	1271
38'	11"	48"	1210	1240	1235	1305
40'	11"	48"	1250	1280	1275	1345
42'	11"	48"	1300	1340	1320	1390
44'	13 1/2"	48"	1497	1527	1555	1635
46'	13 1/2"	48"	1546	1576	1603	1683
48'	13 1/2"	48"	1595	1625	1653	1733
50'	13 1/2"	48"	1654	1684	1702	1782

CRANE CAPACITY IS FOR TOTAL LOAD EXCLUSIVE OF TROLLEYS AND HOIST. See page 254 for details of clearance and interlocks.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 552 Two-Ton Crane Non-Interlocking

## No. 553 Two-Ton Crane Interlocking

### SPECIFICATIONS

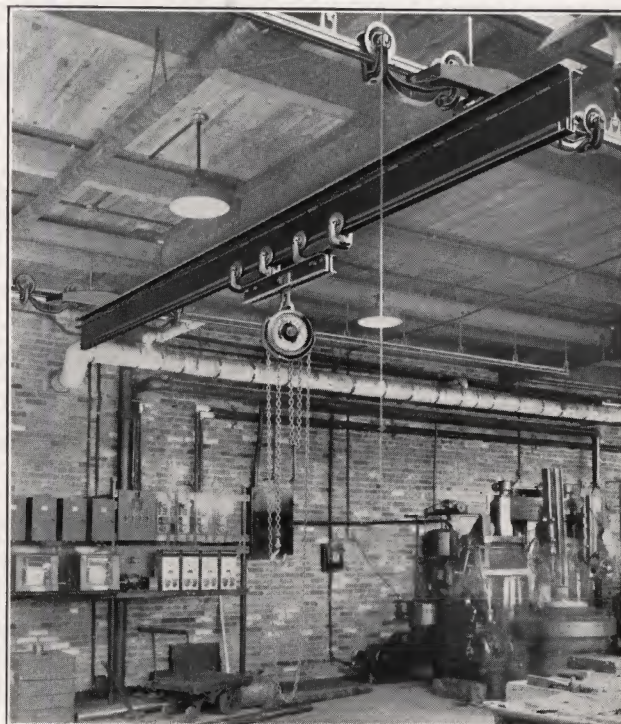
**Crane Bridge:** American Girder Rail.  
**Crane End Trucks:** No. 587, Heavy Steel Angle.  
**Trolley Load Bars:** No. 519, Alloy Steel Casting.  
**Wheels:** No. 539 Drop Forged, Hardened Tread.  
**Wheel Yokes:** No. 561, Heavy malleable casting.  
**Bearings:** Heavy duty New Departure precision ball.

**Crane Runway:** Standard MonoRail or American Girder Rail.  
**Lubrication:** Wheels lubricated through axles with Zerk fitting.  
**Interlock:** May be equipped to interlock with connecting track or other cranes.  
**Finish:** Green Enamel.  
**Dimensions:** See table and sketch on opposite page.

Added carrying capacity is secured in the two-ton crane by the use of eight wheels on each end truck. Wheels are mounted on New Departure precision ball bearings. Each end of crane truck is carried on cast alloy steel load bars which fit into the trolley yokes. This assembly assures utmost safety and provides freedom of movement for easy starting and rolling. Crane bridges are self aligning and cannot bind or drag.

The American Girder Rail used as the bridge member provides a wide margin of lateral strength with a stiffness which permits the lifting and carrying of loads on long spans.

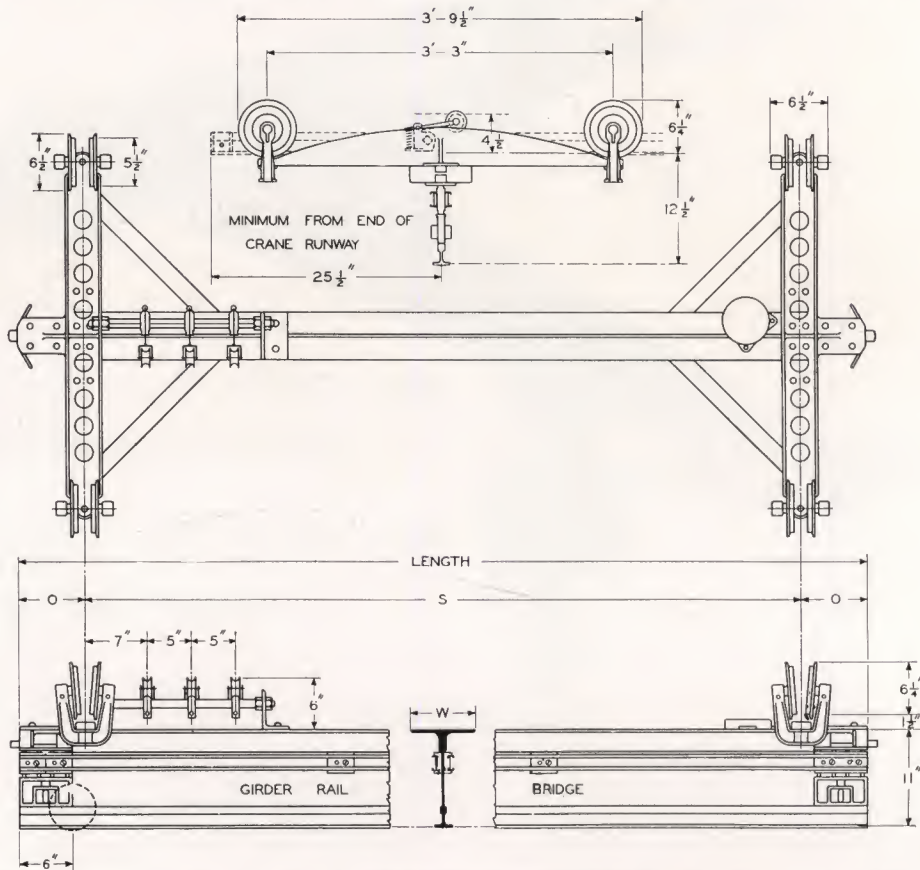
For heavy or light service American MonoRail Cranes operate easily and smoothly along runways of standard MonoRail, Truss or Girder Rail.



Two-Ton Crane handling die blocks in heavy forge shop.



# No. 545 Electrified One-Ton Crane—Interlocking



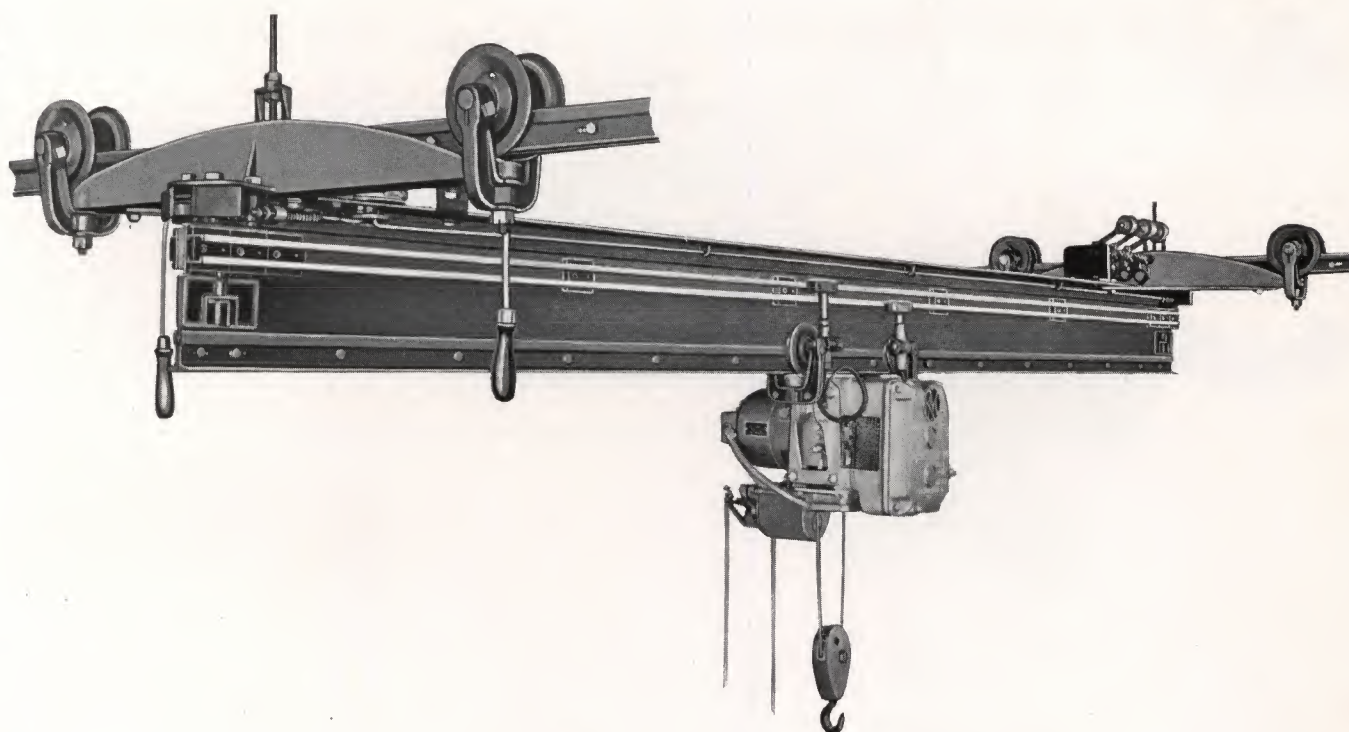
**ELECTRIFIED ONE-TON CRANE DIMENSIONS AND CAPACITIES**

Dimensions			No. E-544 Non-Interlocking		No. E-545 Interlocking	
Overall Length	Depth	Maximum Overhang	Weight	Estimated Shipping Weight	Weight	Estimated Shipping Weight
10'	11"	12"	400	500	414	514
12'	11"	14"	448	548	462	562
14'	11"	16"	495	595	509	609
16'	11"	18"	541	641	557	657
18'	11"	21"	588	688	604	704
20'	11"	24"	635	735	651	751
22'	11"	27"	683	783	699	799
24'	11"	30"	732	832	742	842
26'	11"	34"	774	874	794	894
28'	11"	38"	825	925	841	941
30'	11"	42"	873	973	889	989
<b>THREE TRUCK CRANE</b>						
32'	11"	48"	993	1101	1022	1170
34'	11"	48"	1035	1146	1151	1302
36'	11"	48"	1077	1191	1180	1333
38'	11"	48"	1119	1236	1209	1365
40'	11"	48"	1161	1281	1238	1397
42'	11"	48"	1203	1326	1267	1429
44'	11"	48"	1245	1371	1296	1461
46'	11"	48"	1287	1416	1325	1493
48'	11"	48"	1329	1461	1354	1525
50'	11"	48"	1371	1506	1383	1557

CRANE CAPACITY IS FOR TOTAL LOAD EXCLUDING TROLLEY AND HOIST.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 544 Electrified One-Ton Crane—Non-Interlocking

## No. 545 Electrified One-Ton Crane—Interlocking

### SPECIFICATIONS

Material specifications similar to those listed on page 107 covering one-ton Non-Electrified Cranes.

**Bridge Electrification:** Rigid Bus Bars.

**Craneway Electrification:** No. 919 Grooved Wheel Collectors for copper wire electrification will be furnished. Specify shoe type collectors for rigid bus bars.

**Interlock:** May be equipped to interlock with connecting tracks or other cranes.

**Finish:** Green Enamel.

**Dimensions:** See table and sketch on opposite page.

Including all the advantages described on page 107 covering non-electrified cranes, the units specified above allow full service of electrically operated hoists or MonoTractor driven carriers over the area served by the crane bridge.

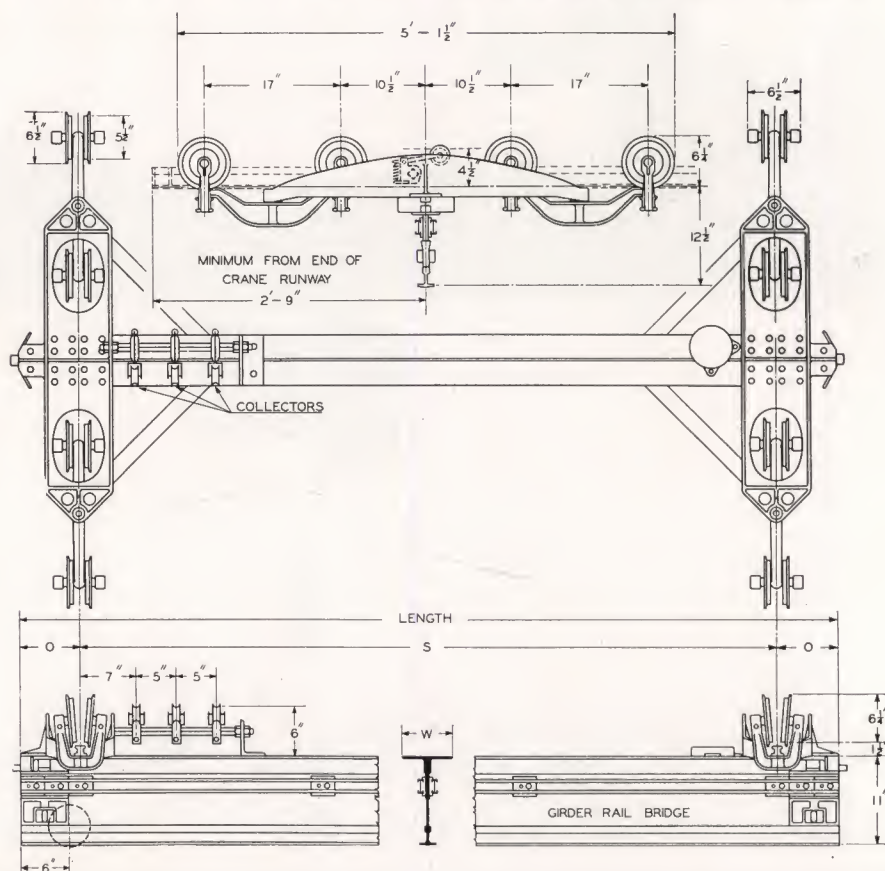
Electrified Cranes operate with the same free moving qualities incident to all American MonoRail crane operation. Tests prove that a mere 14 pounds effort is all that is required to move a one-ton load even when suspended at the end of a 30 foot American MonoRail Crane.



One-ton electrified cranes operate over entire mill area.



# No. 555 Electrified Two-Ton Crane—Interlocking



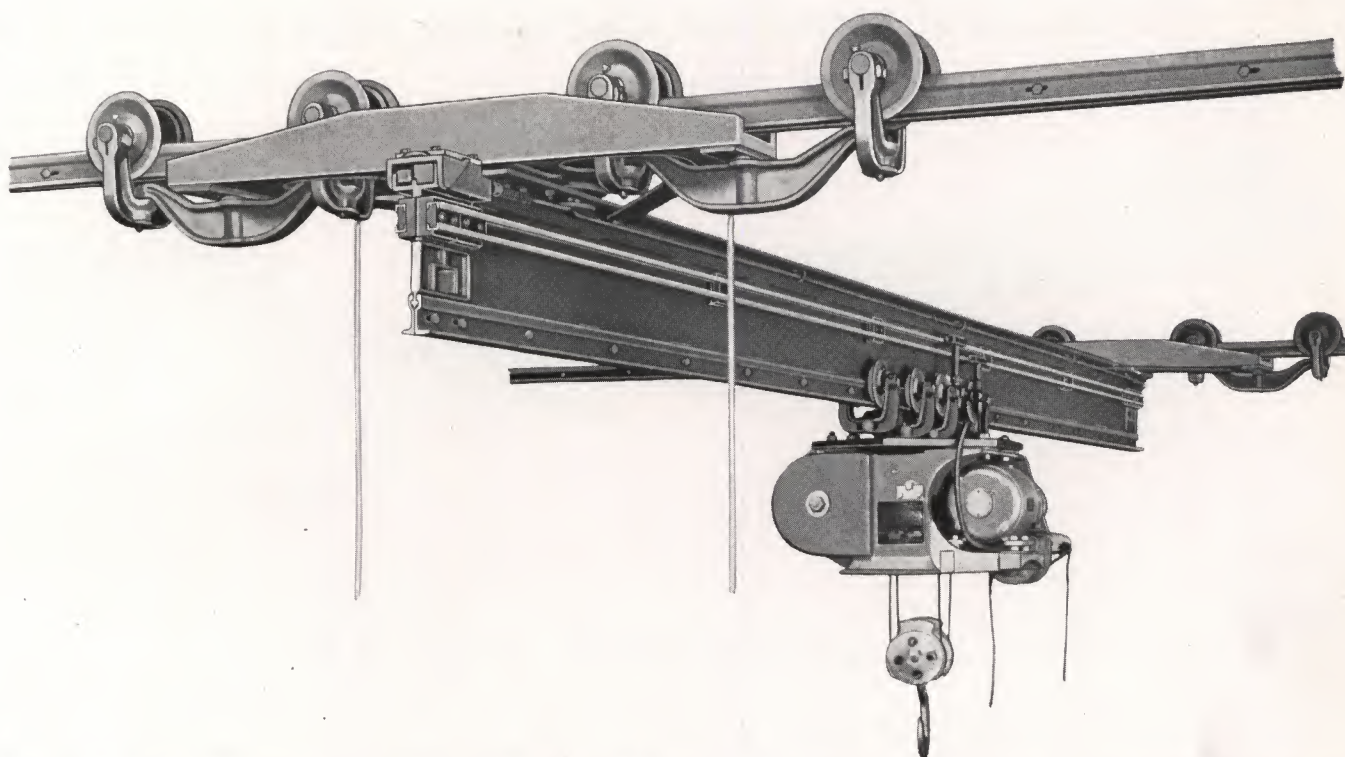
**ELECTRIFIED TWO-TON CRANE DIMENSIONS AND WEIGHTS**

Dimensions			No. E-554 Non-Interlocking		No. E-555 Interlocking	
Overall Length	Depth	Maximum Overhang	Weight	Estimated Shipping Weight	Weight	Estimated Shipping Weight
10'	11"	12"	535	555	557	677
12'	11"	14"	583	607	605	729
14'	11"	16"	630	658	652	780
16'	11"	18"	678	710	700	832
18'	11"	21"	730	765	750	870
20'	11"	24"	780	820	800	920
22'	11"	27"	830	870	850	970
24'	13 1/2"	30"	937	981	983	1127
26'	13 1/2"	34"	987	1035	1039	1187
28'	13 1/2"	38"	1040	1100	1095	1225
30'	13 1/2"	42"	1090	1150	1150	1280
THREE TRUCK CRANES						
32'	11"	48"	1188	1246	1212	1350
34'	11"	48"	1236	1294	1265	1407
36'	11"	48"	1284	1350	1307	1453
38'	11"	48"	1334	1400	1350	1470
40'	11"	48"	1380	1445	1400	1520
42'	11"	48"	1430	1500	1450	1570
44'	11"	48"	1480	1550	1500	1620
46'	13 1/2"	48"	1687	1771	1741	1907
48'	13 1/2"	48"	1742	1830	1796	1966
50'	13 1/2"	48"	1797	1890	1851	2025

CRANE CAPACITY IS FOR TOTAL LOAD EXCLUDING TROLLEY AND HOIST.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## No. 554 Electrified Two-Ton Crane—Non-Interlocking No. 555 Electrified Two-Ton Crane—Interlocking

### SPECIFICATIONS

Material specifications similar to those listed on page 109 covering two-ton non-electrified cranes.

**Bridge Electrification:** Rigid Bus Bars.

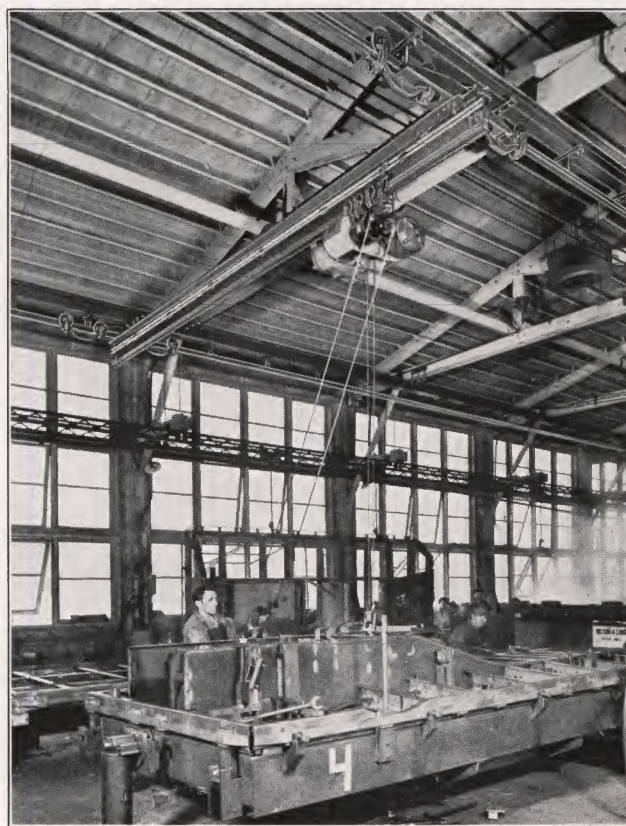
**Craneway Electrification:** No. 919 Grooved Wheel Collector for copper wire electrification will be furnished. Specify shoe type collectors for rigid bus bars.

**Interlock:** May be equipped to interlock with connecting tracks or other cranes.

**Finish:** Green Enamel.

**Dimensions:** See table and drawing on opposite page.

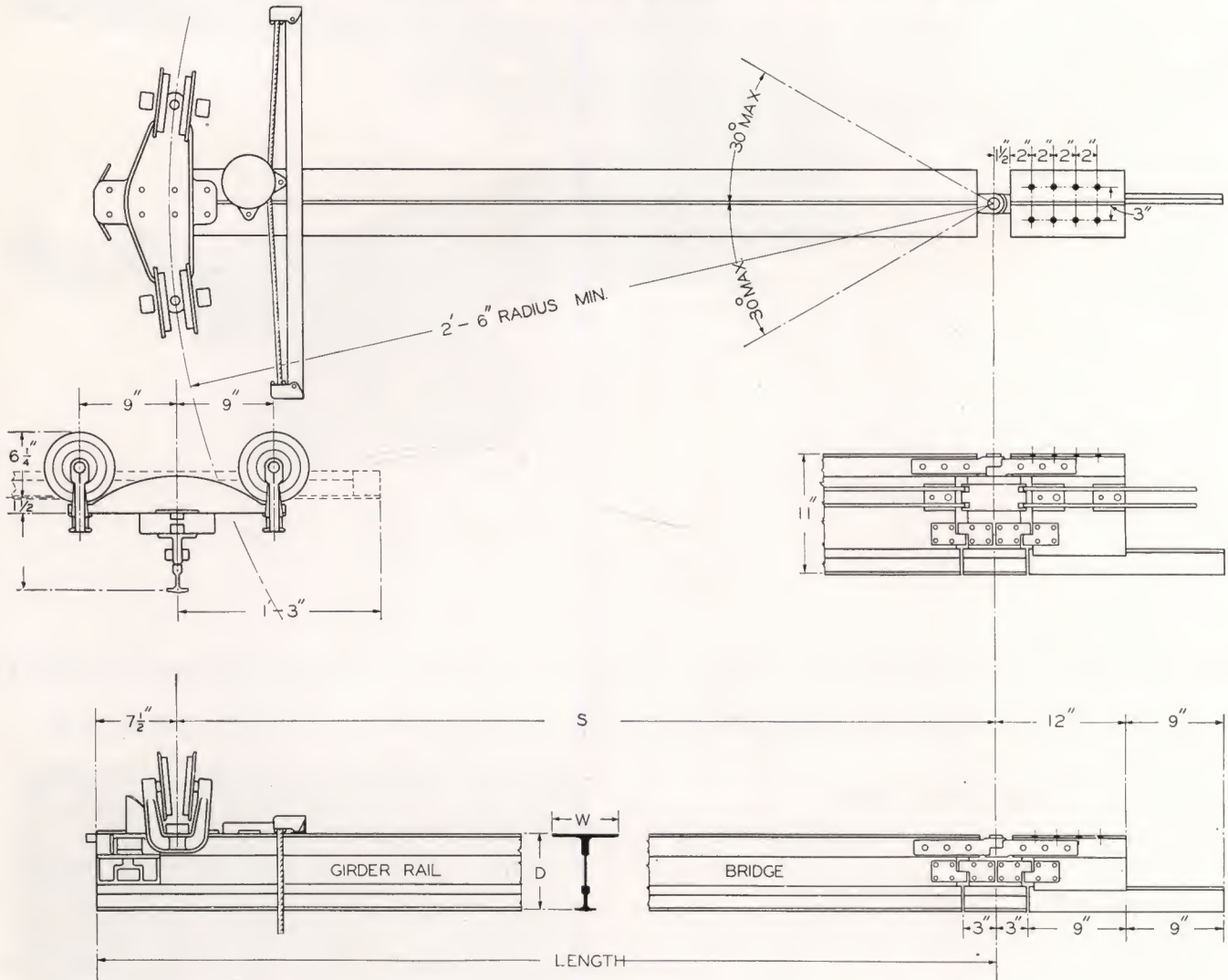
Spread over eight wheels on each crane truck, two-ton loads are handled as easily on an electric hoist as with any other means. Electrification of American Mono-Rail cranes adds relatively little dead weight to the bridge which offers maximum live load capacity exclusive of the weight of electric hoist. This extreme lightness, which carries at all times an ample factor of safety, assures fast starting and easy rolling. Interlocking features provide safety as well as connection between other cranes or connecting tracks.



Two-ton Crane moves large frames from assembly jig.



## No. 583 One-Ton Swinging Crane



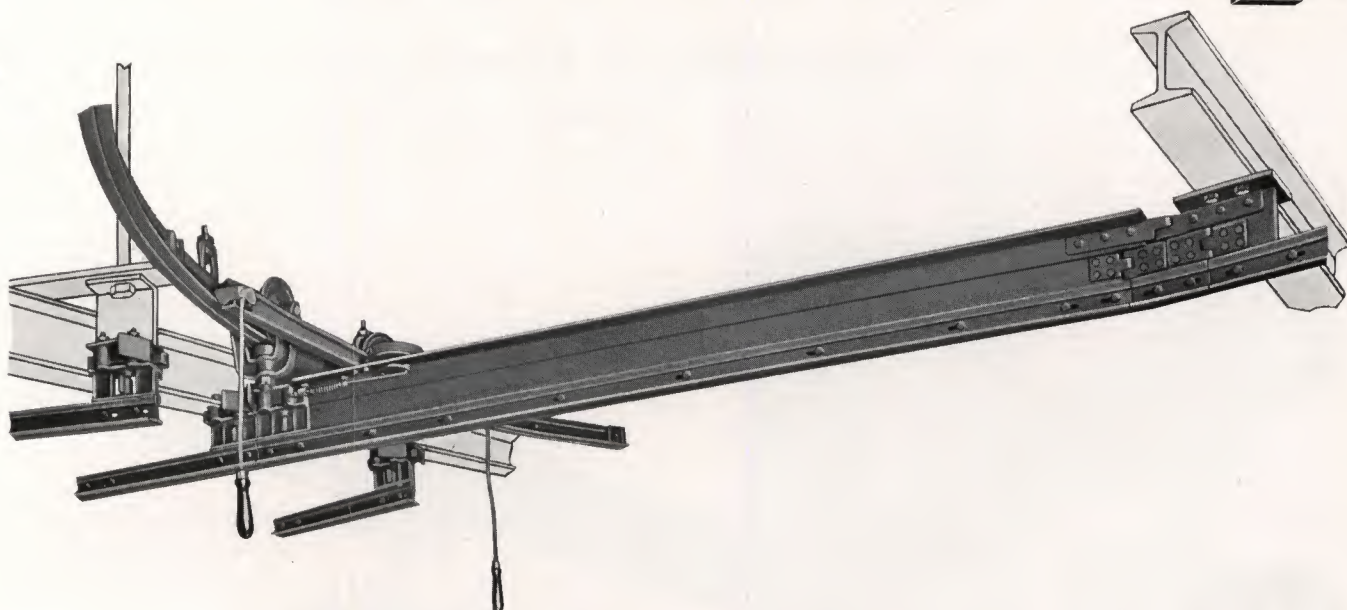
### ONE-TON SWINGING CRANE

Overall Length in Feet	Depth of Bridge	Non-Electrified				Depth of Bridge	Electrified			
		No. 582 Non-Interlocking		No. 583 Interlocking			No. 584 Non-Interlocking		No. 585 Interlocking	
		Weight of Crane	Estimated Shipping Weight	Weight of Crane	Estimated Shipping Weight		Weight of Crane	Estimated Shipping Weight	Weight of Crane	Estimated Shipping Weight
10 <sup>1</sup>	7"	255 lbs.	300 lbs.	270 lbs.	350 lbs.	11"	330 lbs.	430 lbs.	350 lbs.	450 lbs.
12 <sup>1</sup>	7"	290 lbs.	340 lbs.	305 lbs.	385 lbs.	11"	375 lbs.	475 lbs.	395 lbs.	500 lbs.
14 <sup>1</sup>	7"	320 lbs.	370 lbs.	340 lbs.	420 lbs.	11"	425 lbs.	525 lbs.	440 lbs.	550 lbs.
16 <sup>1</sup>	7"	355 lbs.	405 lbs.	370 lbs.	450 lbs.	11"	470 lbs.	570 lbs.	490 lbs.	600 lbs.
18 <sup>1</sup>	9"	410 lbs.	460 lbs.	435 lbs.	525 lbs.	11"	520 lbs.	625 lbs.	540 lbs.	650 lbs.
20 <sup>1</sup>	9"	450 lbs.	500 lbs.	470 lbs.	560 lbs.	11"	565 lbs.	670 lbs.	585 lbs.	700 lbs.
22 <sup>1</sup>	9"	485 lbs.	540 lbs.	505 lbs.	595 lbs.	11"	615 lbs.	720 lbs.	635 lbs.	750 lbs.
24 <sup>1</sup>	11"	600 lbs.	660 lbs.	615 lbs.	710 lbs.	11"	665 lbs.	775 lbs.	685 lbs.	800 lbs.
26 <sup>1</sup>	11"	640 lbs.	700 lbs.	655 lbs.	750 lbs.	11"	710 lbs.	820 lbs.	730 lbs.	850 lbs.
28 <sup>1</sup>	11"	680 lbs.	745 lbs.	700 lbs.	800 lbs.	11"	760 lbs.	870 lbs.	780 lbs.	900 lbs.

Crane Capacity—2000 lbs. exclusive of weight of Trolley and Hoist.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## One-Ton Swinging Crane

### NON-ELECTRIFIED

No. 582—Non-Interlocking  
No. 583—Interlocking

### ELECTRIFIED

No. 584—Non-Interlocking  
No. 585—Interlocking

### SPECIFICATIONS

**Crane Bridge:** Girder Rail.

**Crane Truck:** No. 557, Malleable Castings.

**Wheels:** No. 539 Drop forged, Hardened Tread with New Departure heavy duty precision ball bearings.

**Yokes:** No. 561, Malleable Castings.

**Crane Runway:** Standard MonoRail Track.

**Interlock:** May be furnished for connection with radiating tracks.

**Finish:** Green Enamel.

**Dimensions:** See opposite page.

The MonoRail swinging crane has been designed to connect MonoRail runway with a number of radiating tracks, operating as a multiple switch.

The number of permitted connecting tracks is limited first by the swing of the crane with a 30 degree maximum on either side of the center line of the supporting hinge, also by the minimum space of seven inches allowed between radiating tracks. Where greater than 60° swing is desired, special fittings are necessary and can be furnished.

Smooth travel of trolleys over the stationary end of this crane is provided by the specially designed flexible hinge.

Standard MonoRail design and construction insures an ample factor of safety in the operation of this swinging crane.



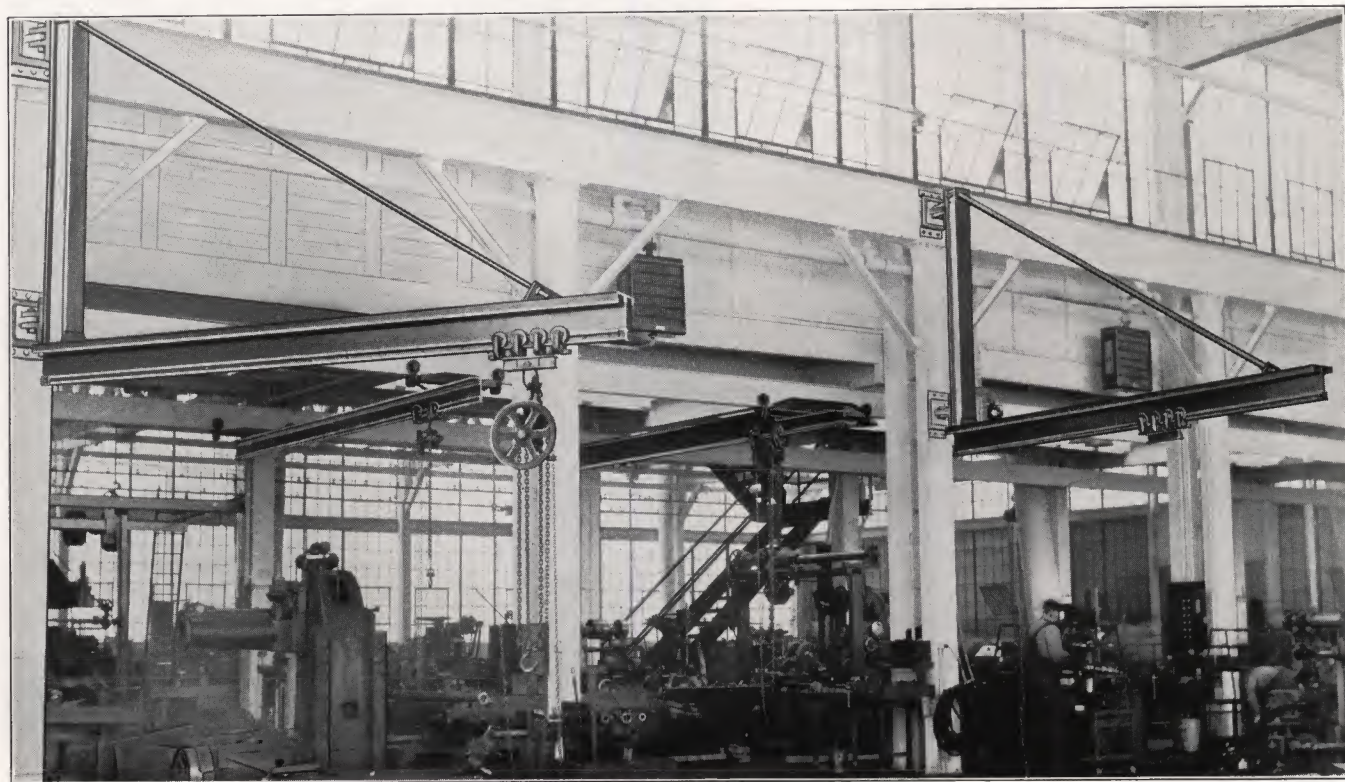
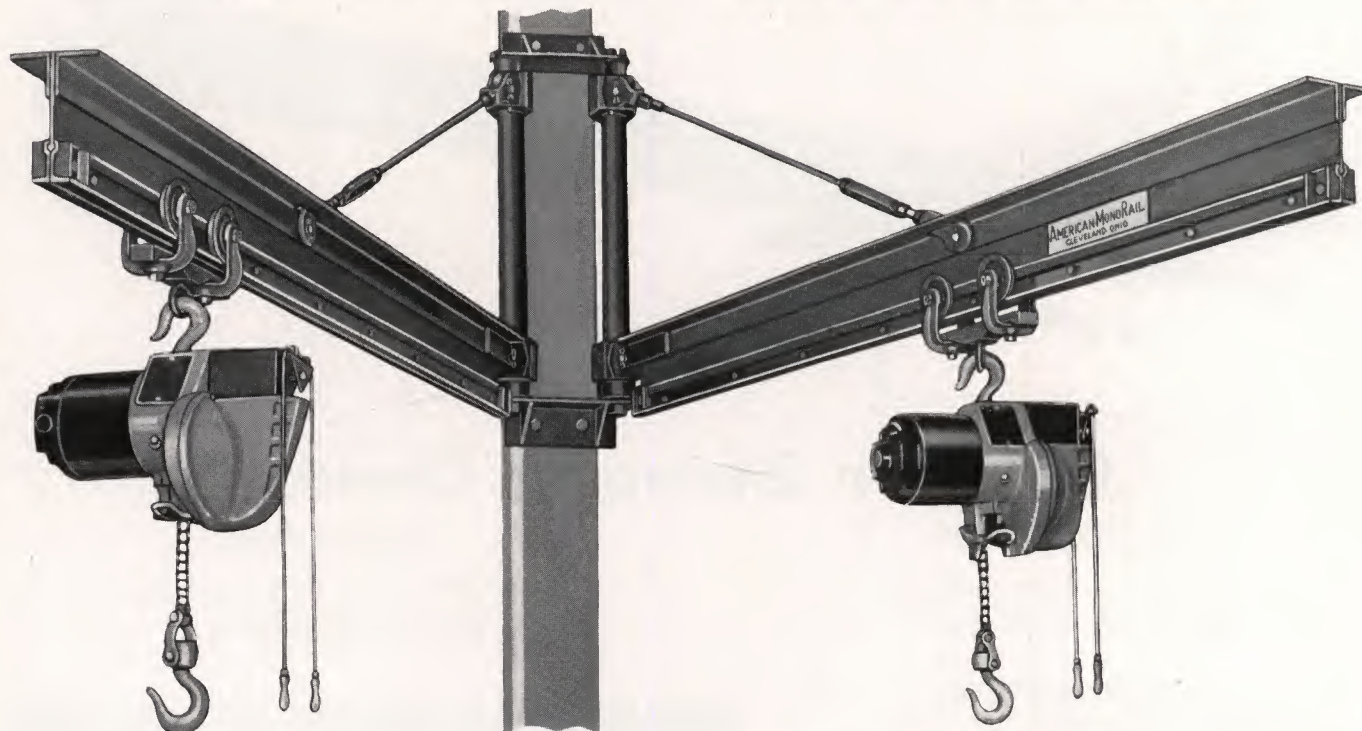
MonoRail Swinging Cranes in the plant of the Lebanon Steel Co., Lebanon, Pa.



# American MonoRail Swinging Jibs

On this and the opposite page are shown various types of jib cranes built to meet special requirements in each case. The twin jibs shown

immediately below swing easily on roller bearings. This type can be built with a single jib mounted in center of supporting column.



Swinging jibs furnish hoist hook service to machines beneath their radii.



## Swinging Jibs

American MonoRail Swinging Jibs are designed to meet the following situations:

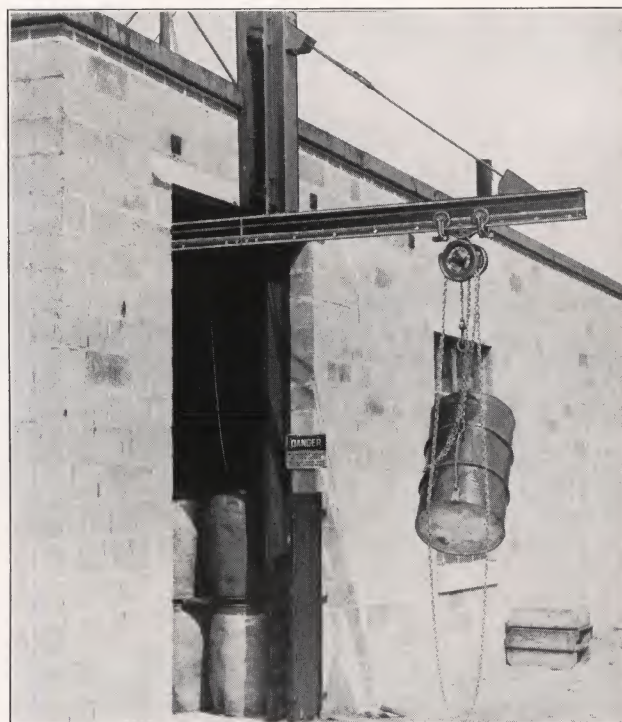
Mounted on post or column to cover a definite floor area;

To distribute traffic to a series of radiating tracks with which it interlocks;

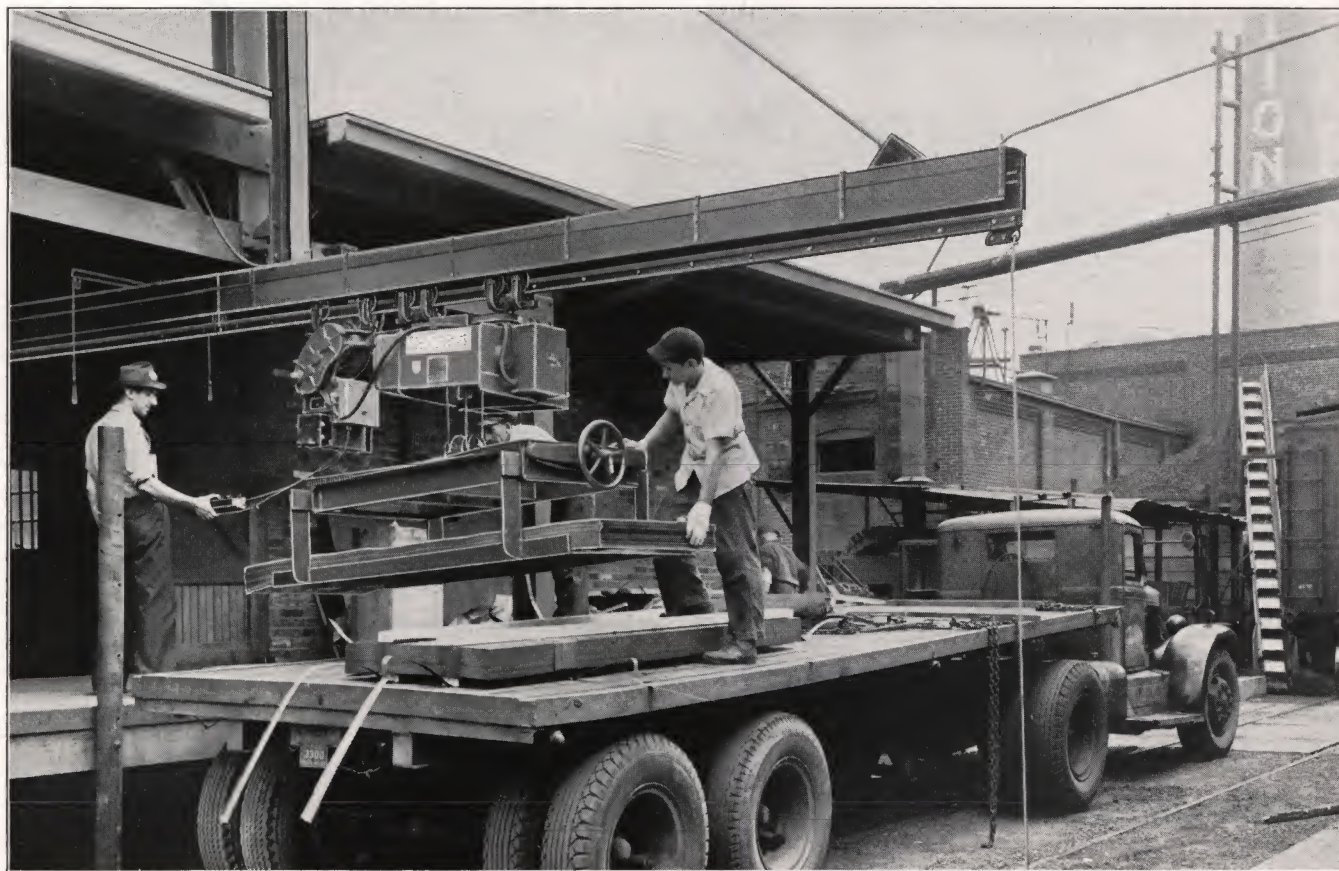
To swing over receiving or loading docks. When the crane is not in use it swings to clear the passage or doorway. It may also be made to tie in with tracks to bridge the passage between two buildings or working areas.

Thrust loads on heavy type jib hinges are taken by roller bearings equipped for pressure lubrication. Design and construction throughout are consistent with the standards set up for all MonoRail equipment.

Recommendations will be given upon receipt of information on load, height, length and whether interlocking or non-interlocking type is required. Also state if overhand is required at hinge end. The greater the height, the less the stresses, hence less cost in the jib.

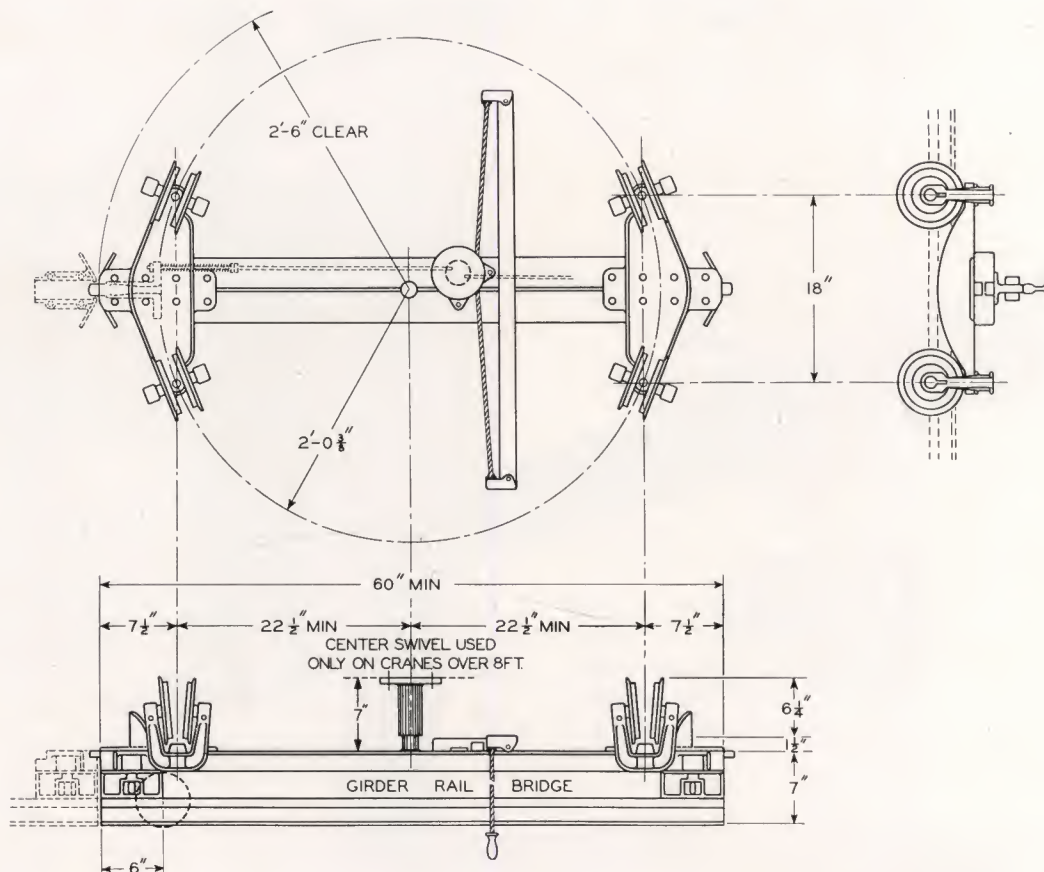


Short jib removed drums for passage across interlock to crane inside building.



Electrified jib helps remove sheet steel to storage with MonoTractor-Hoist unit.





## One-Ton Swiveling Crane

### Non-Electrified

No. 562 Non-Interlocking

No. 563 Interlocking

### Electrified

No. 564 Non-Interlocking

No. 565 Interlocking

### SPECIFICATIONS

**Crane Bridge:** Girder Rail.

**Crane Trucks:** No. 557, Malleable Castings.

**Wheels:** No. 539 Drop forged, Hardened Tread with New Departure heavy duty precision ball bearings.

**Yokes:** No. 561, Malleable Castings.

**Crane Runway:** Standard MonoRail.

**Finish:** Green Enamel.

**Lubrication:** Through axles with Zerk fittings

The American MonoRail Swiveling Crane is a true crane in type which travels on a circular runway and performs the function of a turntable.

The swiveling crane is designed to serve a number of radiating tracks, the minimum permitted spacing at interlocks being seven inches.

Full load bearing capacity of one ton is obtained by

the design and construction of this crane, standard MonoRail track supplying the runway. The crane trucks are mounted on standard crane yoke and wheel assemblies, while American Girder Rail is used for the crane bridge.

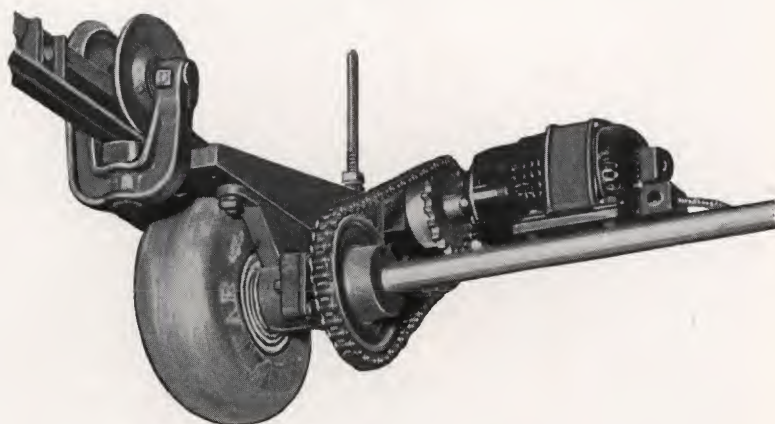
Automatic safety devices protect both crane and connecting tracks when open.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



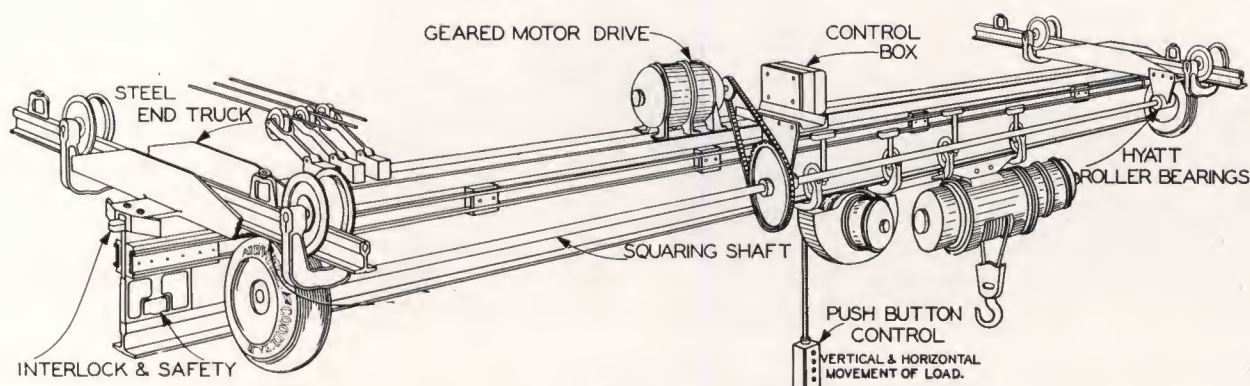
# 14 Advantages of American MonoTractors

1. Eliminates wear of track flanges or wheel treads.
2. Greater draw-bar pull per horsepower of motor applied.
3. No slipping or spinning of wheels when starting or on curves.
4. Requires no added weight to obtain traction.
5. Handles loads up or down grades under perfect control.
6. Permits use of squirrel cage motors.
7. Meets any current characteristics without special equipment.
8. Offers unlimited range of control possibilities.
9. Stops automatically within 1½" of pre-set limits.
10. Provides greater mileage without repair.
11. Easily replaced rubber tire is only wearing part.
12. Can be applied to carriers or cranes already installed.
13. Operates on any track having a smooth undersurface.
14. Lower initial cost on almost every application.

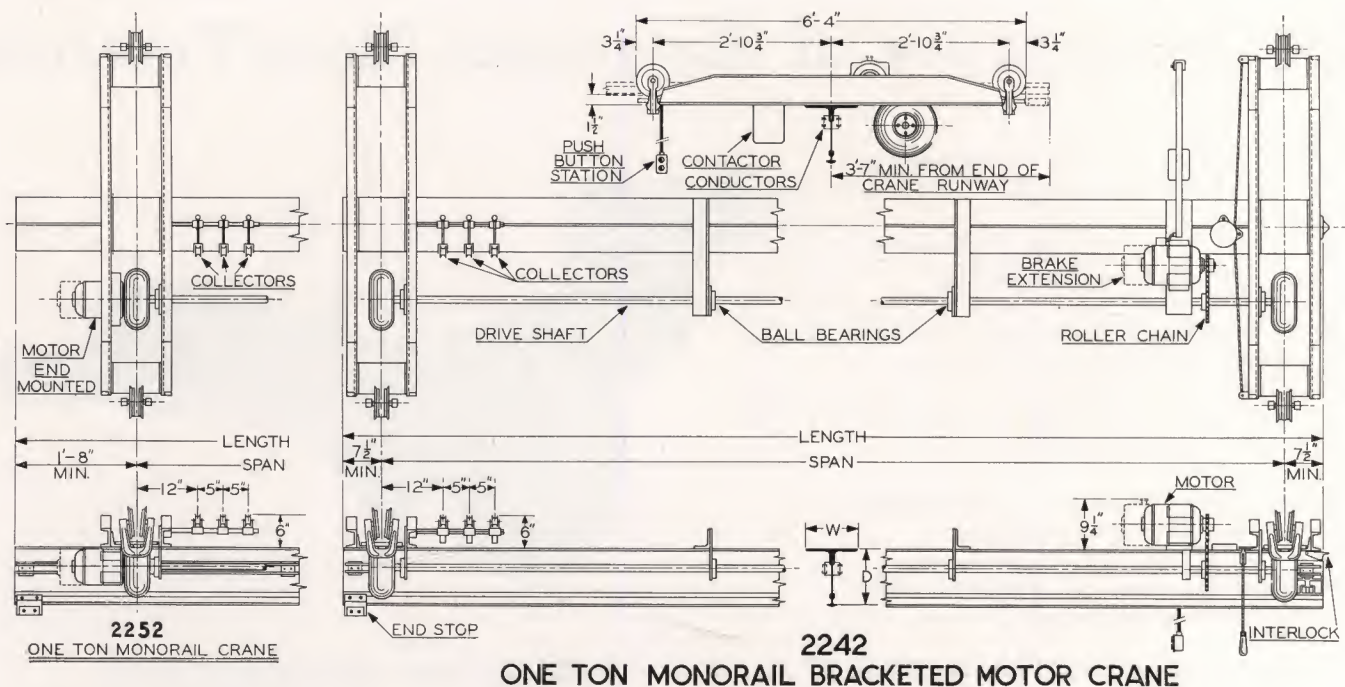


## AMERICAN MONOTRACTOR RUBBER WHEEL CRANE DRIVE

As illustrated above, an electric gear head motor with chain and sprocket propels rubber wheels attached to a squaring shaft. These wheels are mounted under each crane truck and contacted against the bottom of the runway rails. The increased tractive contact thereby obtained, together with the non-slipping grip of rubber-to-steel, provides a positive drive that develops tremendous draw-bar pull from a fractional horsepower motor. Wheels do not spin when power is applied since traction is entirely independent of the load. With a drive wheel under each crane truck, only one power unit is necessary regardless of the bridge length. Complete descriptions on pages 187 and 188 indicate the unlimited possibilities of control application.







### SPECIFICATIONS

Material specifications follow closely those listed on pages 107 and 111 covering hand operated one-ton cranes.

**Rubber Tire:** No. V-2300 12"x3".

**Drive Shaft Bearings:** New Departure Precision Ball. Lubricated for life of bearing.

**Motor Unit:** Full ball bearing, planetary gear head type. Gears run in oil bath. Motor is crane type, neat and compact. Can be furnished with multiple disc, integrally built brake operating directly off motor shaft.

**Control:** See pages 187 and 188 for full description.

### ONE-TON MONOTRACTOR CRANE DIMENSIONS AND WEIGHTS

Overall Length	Bridge Section	Maximum Overhang	Single Bridge Cranes		Double Bridge Cranes*		
			No. 2242 Non-Interlocking Shipping Weight	No. 2243 Interlocking Shipping Weight	Bridge Section	No. 2294 Non-Interlocking	No. 2295 Interlocking
10'	E-602	15"	1060	1110	E-610	1770	1845
12'	E-602	18"	1150	1200	E-610	1950	2025
14'	E-602	21"	1240	1290	E-610	2130	2205
16'	E-602	24"	1320	1370	E-610	2310	2385
18'	E-602	27"	1410	1460	E-610	2490	2565
20'	E-602	30"	1500	1550	E-610	2670	2745
22'	E-602	33"	1590	1640	E-610	2850	2925
24'	E-602	36"	1680	1730	E-610	3030	3105
26'	E-602	39"	1760	1810	E-610	3210	3285
28'	E-602	42"	1850	1900	E-610	3390	3465
30'	E-602	45"	1940	1990	E-610	3570	3645
32'	E-602	48"	2030	2080	E-610	3750	3825
THREE TRUCK CRANES							
36'	E-602	48"	2445	2495	E-610	4470	4545
40'	E-602	48"	2620	2670	E-610	4830	4905
44'	E-602	48"	2795	2845	E-610	5190	5265
48'	E-602	48"	2970	3020	E-610	5550	5625
52'	E-602	48"	3150	3200	E-610	5910	5985
56'	E-602	48"	3325	3375	E-610	6270	6345
60'	E-602	48"	3500	3550	E-610	6630	6705

Bridge sections on above cranes furnished with electrification.

For dimensions of Bridge Sections, see page 256.

Crane Capacity—2000 lbs. exclusive of weight of Trolley and Hoist.

\*See page 256 for dimensional detail covering Double Bridge Cranes.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## One-Ton MonoTractor Crane

No. 2242—Non-Interlocking

No. 2243—Interlocking

With the advantages of the rubber tire drive as outlined on page 119 American MonoRail Cranes can be applied at low cost to meet conditions requiring motor driven operation.

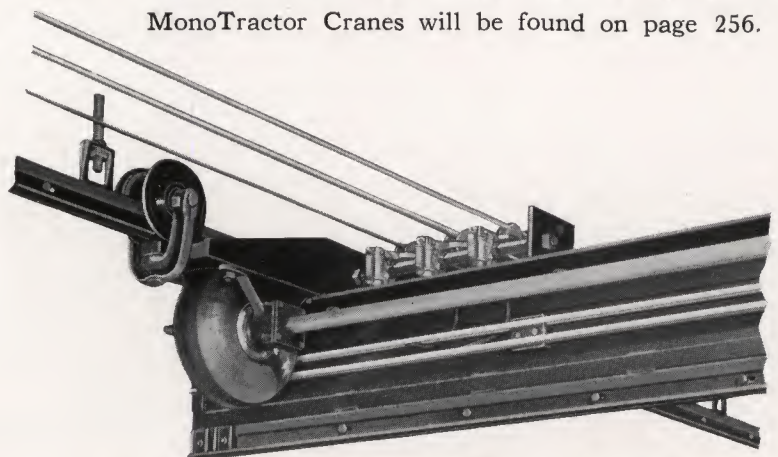
MonoTractor Cranes, of either transfer or non-transfer type, operate on two or more runways with rubber drive wheels mounted under each runway track on a squaring shaft geared to the drive motor.

Precision spotting of loads can be accomplished by finger tip control actuating movement of crane bridge as well as electric hoist or carrier on the bridge.

Where side clearance permits, drive motors can be mounted directly on one

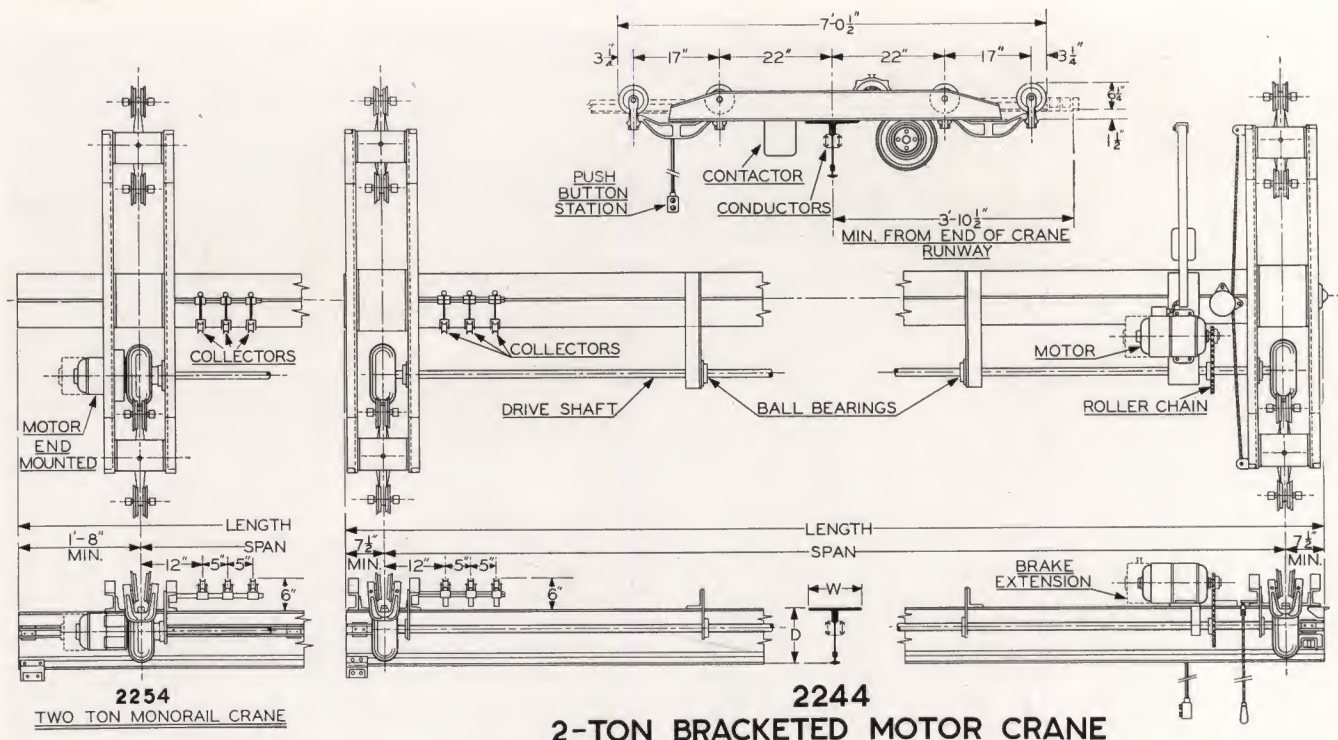
end of the squaring shaft. This method eliminates chain and sprocket, provides positive drive and reduces headroom requirements. See drawing on opposite page showing No. 2252 End Mounted MonoTractor Crane.

Load table covering bridge sections used for all MonoTractor Cranes will be found on page 256.



Showing application of rubber drive wheel contacted against bottom of runways. Wheel is mounted on shaft geared to electric motor.





### SPECIFICATIONS

Material specifications follow closely those listed on pages 109 and 113 covering hand operated two-ton cranes.

**Rubber Tire:** No. V-2300 12"x3".

**Drive Shaft Bearings:** New Departure Precision Ball. Lubricated for life of bearing.

**Motor Unit:** Full ball bearing, planetary gear head type. Gears run in oil bath. Motor is crane type, neat and compact. Can be furnished with multiple disc, integrally built brake operating directly off motor shaft.

**Control:** See pages 187 and 188 for full description.

### TWO-TON MONOTRACTOR CRANE DIMENSIONS AND SHIPPING WEIGHTS

Overall Length	Maximum Overhang	Single Bridge Cranes		
		Bridge Section	No. 2244 Non-Interlocking	No. 2245 Interlocking
10'	15"	E-602	1100	1150
12'	18"	E-602	1190	1240
14'	21"	E-602	1280	1330
16'	24"	E-602	1360	1410
18'	27"	E-602	1450	1500
20'	30"	E-602	1540	1590
22'	33"	E-602	1630	1680
24'	36"	E-602	1720	1770
26'	39"	E-603	2250	2300
28'	42"	E-603	2370	2420
30'	45"	E-603	2490	2540
32'	48"	E-603	2610	2660
THREE TRUCK CRANES				
36'	48"	E-602	2495	2545
40'	48"	E-602	2670	2720
44'	48"	E-602	2845	2895
48'	48"	E-602	3020	3095
52'	48"	E-603	4135	4185
56'	48"	E-603	4380	4430
60'	48"	E-603	4630	4680

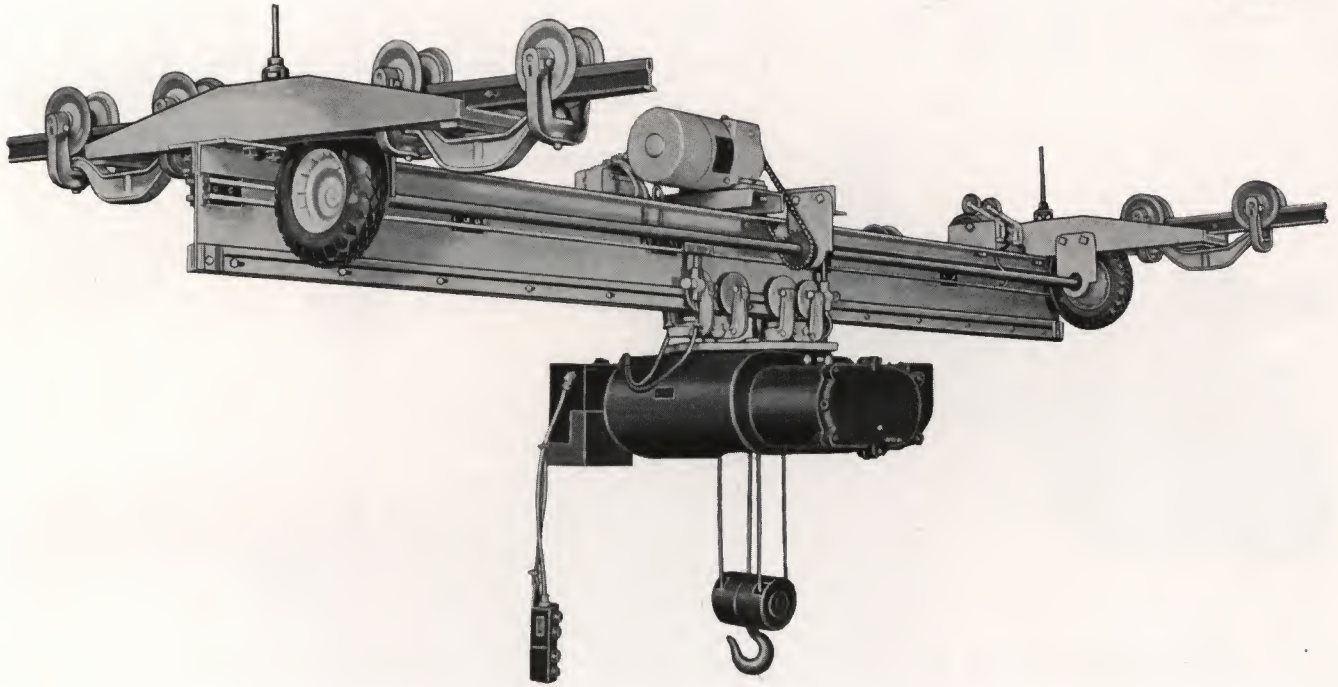
Bridge sections on above cranes furnished with electrification.

For dimensions of Bridge Sections listed, see page 256.

Crane Capacity—4000 lbs. exclusive of weights of Trolley and Hoist.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## Two-Ton MonoTractor Crane

No. 2244—Non-Interlocking

No. 2245—Interlocking

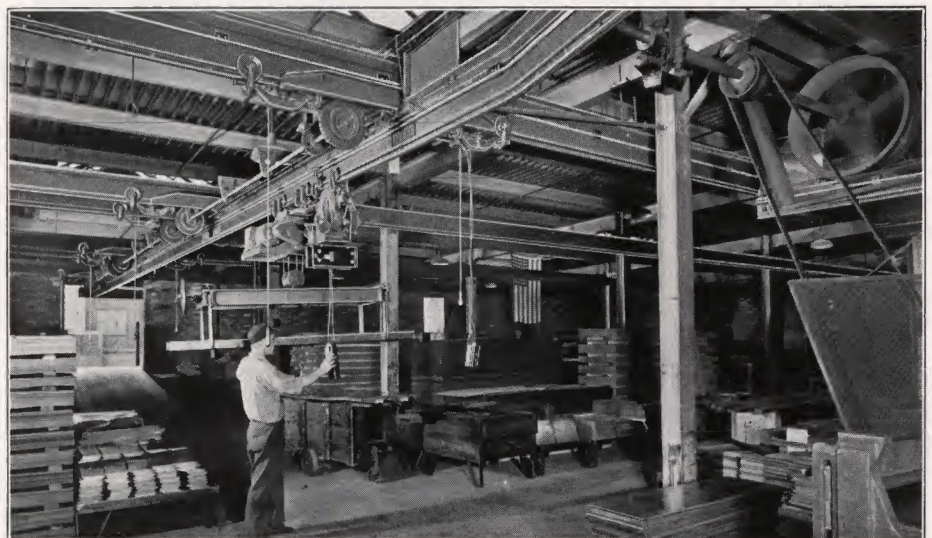
For specifications and table see opposite page.

The two-ton MonoTractor Crane embodies all the features of the one-ton crane with added carrying capacity secured by eight-wheel trucks and heavier bridges. See page 256 for load table covering sections used as crane bridge members.

Advantages of the rubber tire drive are explained in detail on page 119. Both methods of mounting drive motors are shown in detail on opposite page.

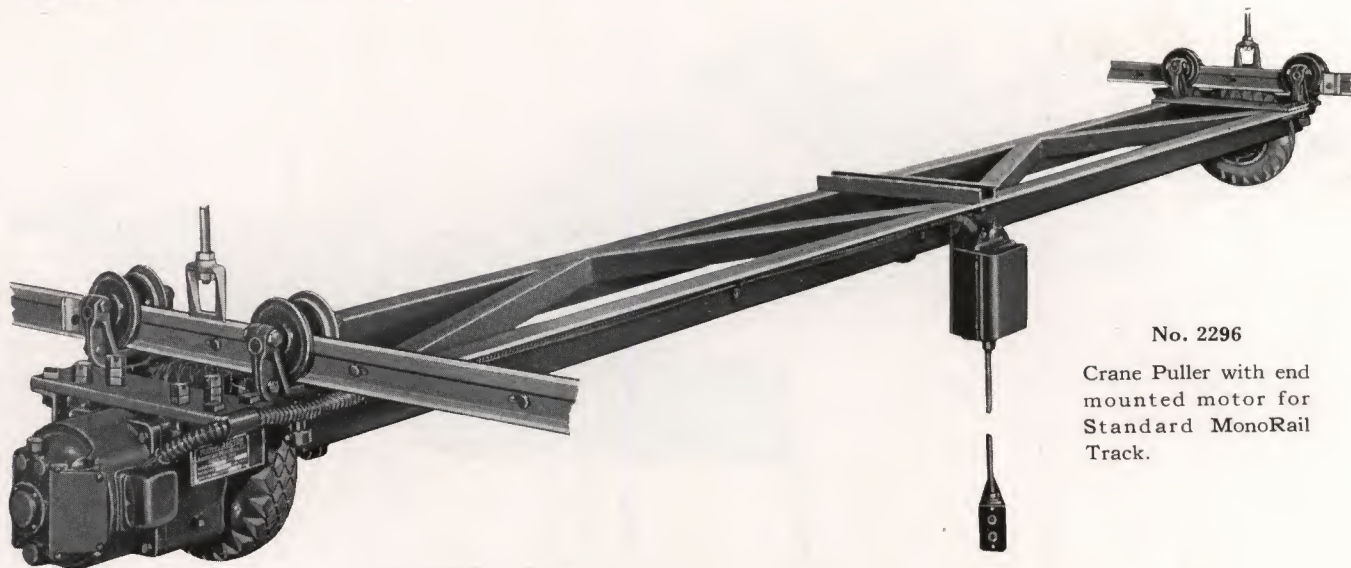
Control of two-ton MonoTractor cranes can be maintained from floor or from a cab either fixed or traveling on the crane bridge. See pages 182, 183 and 184 for descrip-

tion of various cabs available. Operation from cab is accomplished by using the fourth conductor as a single wire reversing control. Pages 187 and 188 contain complete data covering control possibilities.



Three Interlocking Cranes serve entire steel storage.





No. 2296

Crane Puller with end mounted motor for Standard MonoRail Track.

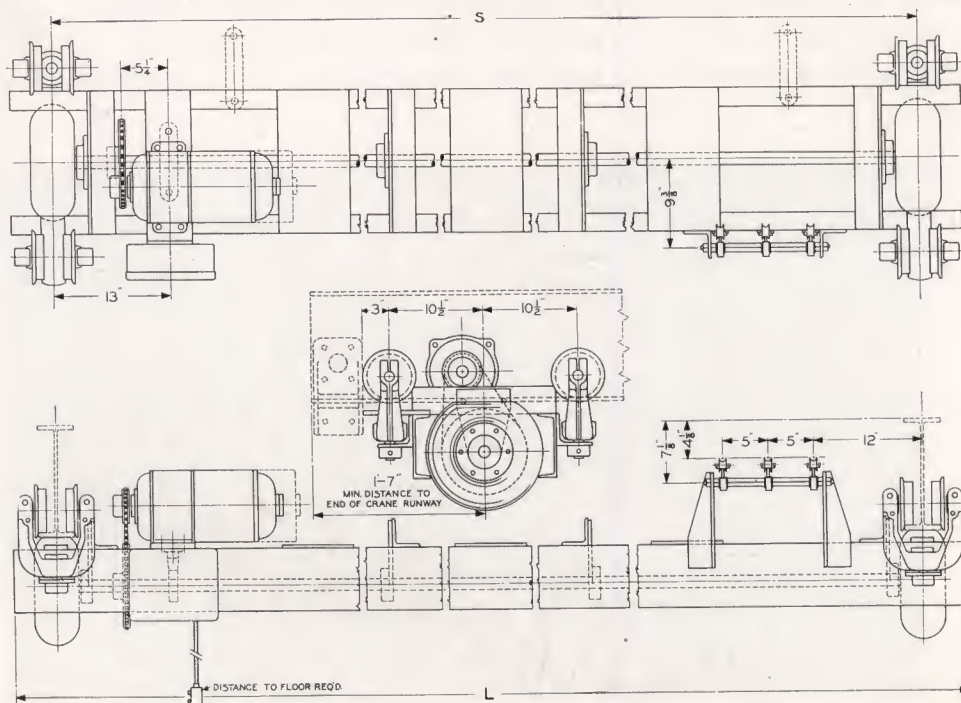
# American MonoRail Crane Puller

No. 2296—For Standard MonoRail Track

No. ME-93—For RailMaster Track

Crane Pullers consist of simple, structural frames for mounting gear head motor, squaring shaft, pneumatic drive wheels, trolleys and control apparatus. The unit, when attached to a hand operated crane, provides power operation of bridge along the runways.

With trolleys furnished to fit any rail flange, crane pullers can be applied to all types of hand operated cranes installed. The numbers listed above cover adaptation to both standard and RailMaster tracks.



Drive motor can be mounted directly on one end of the squaring shaft for low headroom where side clearance is available, or geared to the shaft with chain and sprocket as shown in drawing below.

Crane Pullers offer all the advantages of the rubber tire drive as described on page 119 covering Standard MonoTractor cranes.

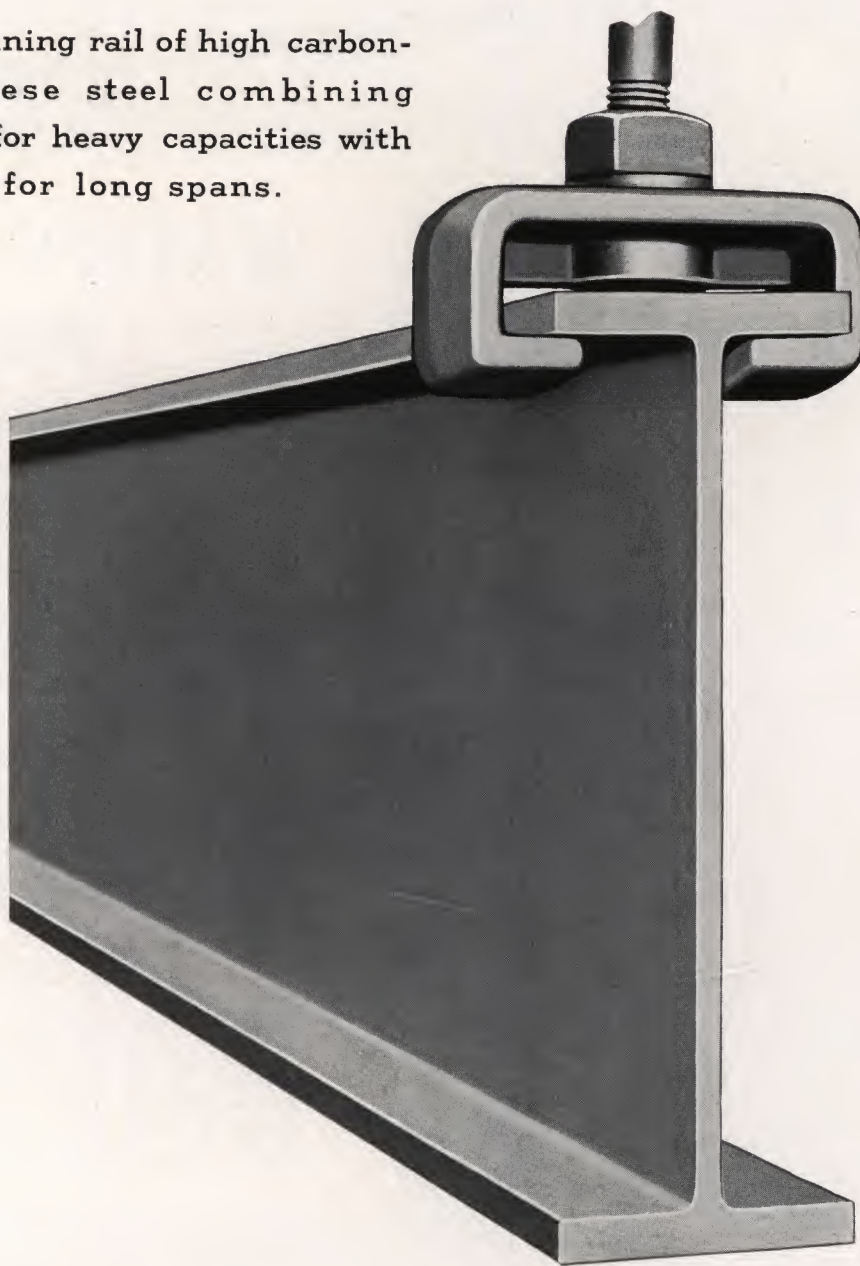
Dimension drawing of No. ME-93 Crane Puller for RailMaster Track.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# RAILMASTER TRACK

A non-peining rail of high carbon-manganese steel combining strength for heavy capacities with stiffness for long spans.

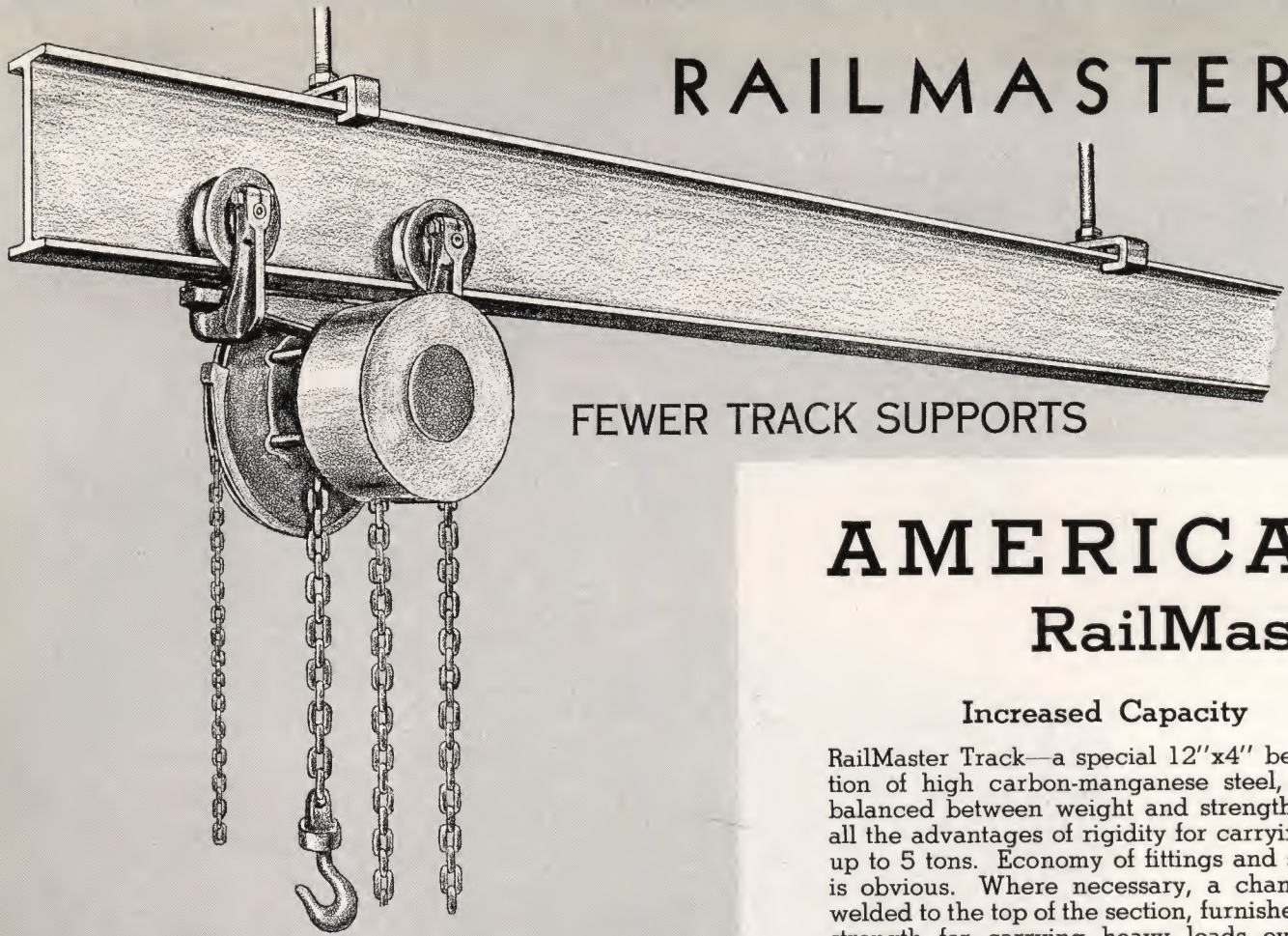


## Points of Advantage

- |                                |                            |
|--------------------------------|----------------------------|
| 1. Increased Carrying Capacity | 4. Shop Matched Joint      |
| 2. Fewer Track Supports        | 5. Compact Electrification |
| 3. Balanced Section Design     | 6. Rubber Tire Drive       |



# RAILMASTER



FEWER TRACK SUPPORTS

COMPLETE EQUIPMENT

## AMERICAN RailMaster

### Increased Capacity

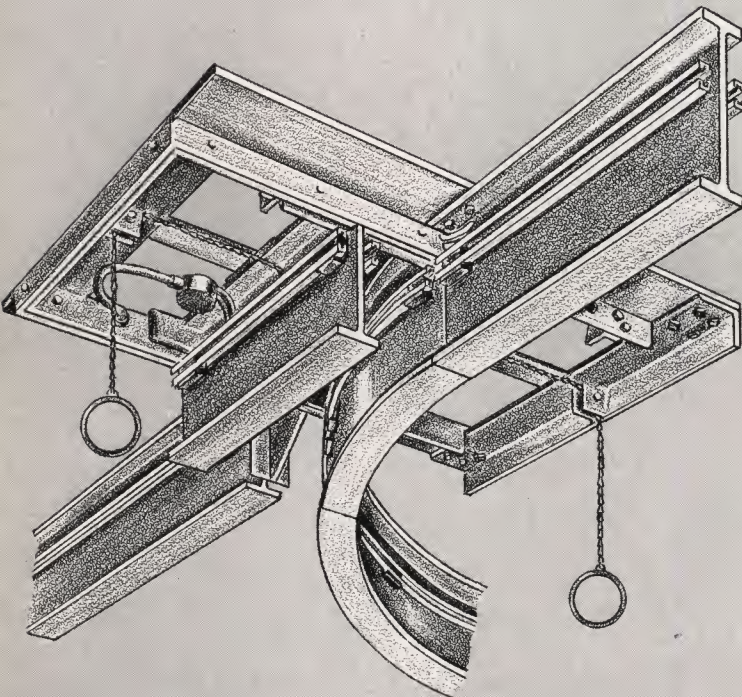
RailMaster Track—a special 12"x4" beam section of high carbon-manganese steel, equally balanced between weight and strength—offers all the advantages of rigidity for carrying loads up to 5 tons. Economy of fittings and supports is obvious. Where necessary, a channel cap welded to the top of the section, furnishes added strength for carrying heavy loads over long spans with no extra suspension fittings.

### Free Moving Switch

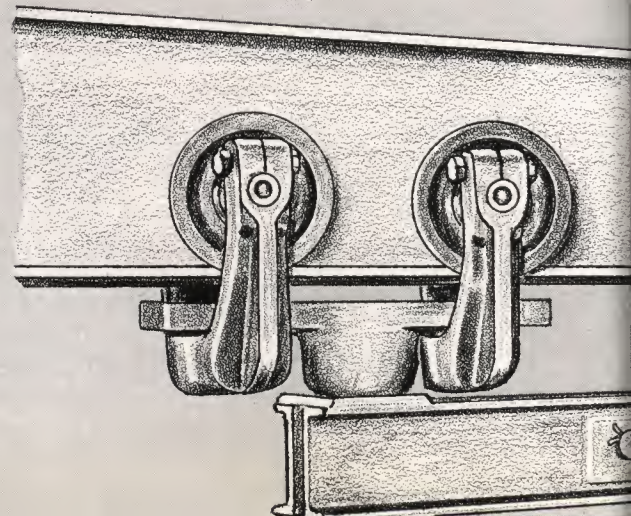
Although ruggedly built for greater capacity, RailMaster Switches of both tongue and glide types, operate smoothly, the moving sections riding on roller bearings. Shop matched track joints assure jolt free travel of trolleys.

### Heavy Duty Trolleys

Heavy forged wheels accurately machined to receive precision bearings on steel axles are mounted in heavy malleable yokes to form RailMaster trolleys. Wheel treads are flame hardened for long wear under heavy duty rolling loads. Yoke saddles have steel bearings for



FREE MOVING GLIDE SWITCH





# MONORAIL

CARRIES HEAVIER LOADS

## MONORAIL Advantages

swivel action while the load bars on 4 and 8 wheel trolleys carry thrust bearings to allow load swivel.

### Compact Electrification

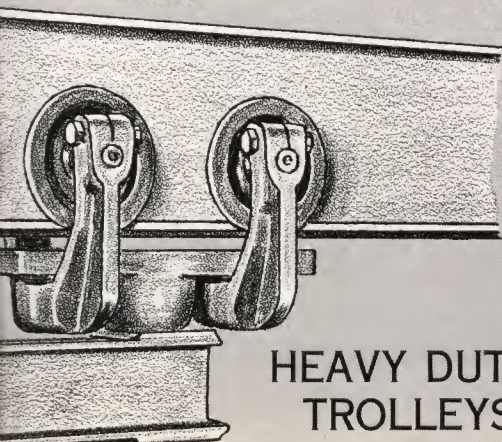
Power is carried to hoist and tractor units over steel channel bus bars mounted in pairs against the sides of RailMaster Track by bakelite insulators. This compact method of electrification permits power operation of any equipment used in the system with unlimited control possibilities.

### Rubber Wheel Drive

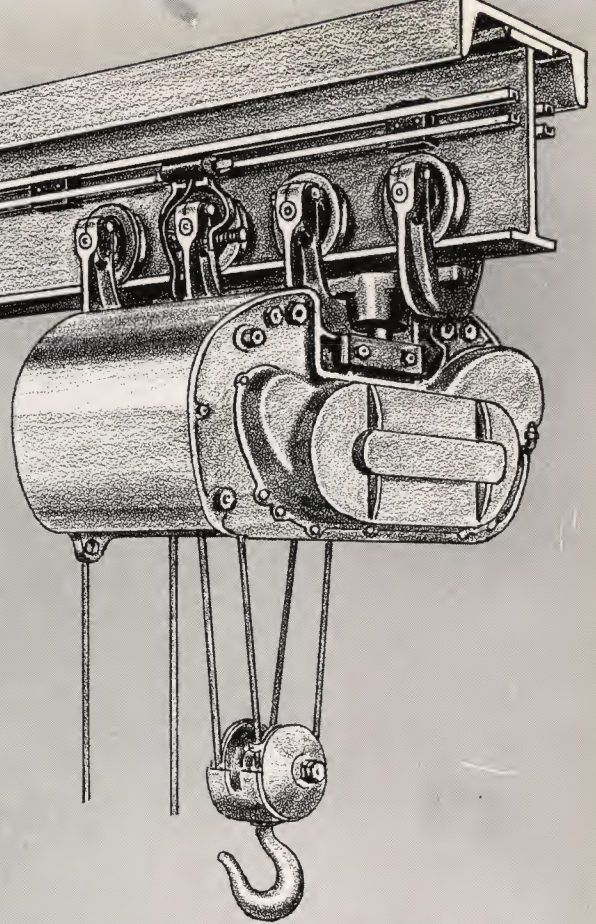
RailMaster MonoTractors propel heavy loads throughout a system from push-button or cab control. The increased tractive contact of the rubber drive wheel against the steel track delivers tremendous draw-bar pull for heavy loads.

### Complete Equipment

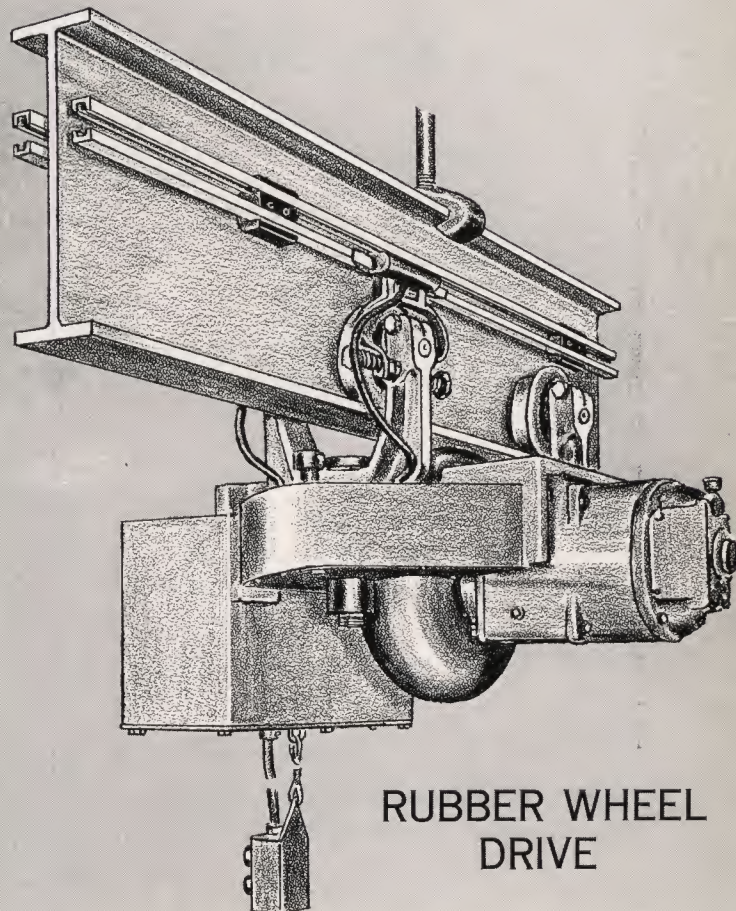
While offering maximum strength to carry loads up to 5 tons, RailMaster equipment can be flexibly applied to meet any complicated track layout. Lift, dip and scale sections, together with grabs, racks and buckets are available for auxiliary service.



HEAVY DUTY  
TROLLEYS

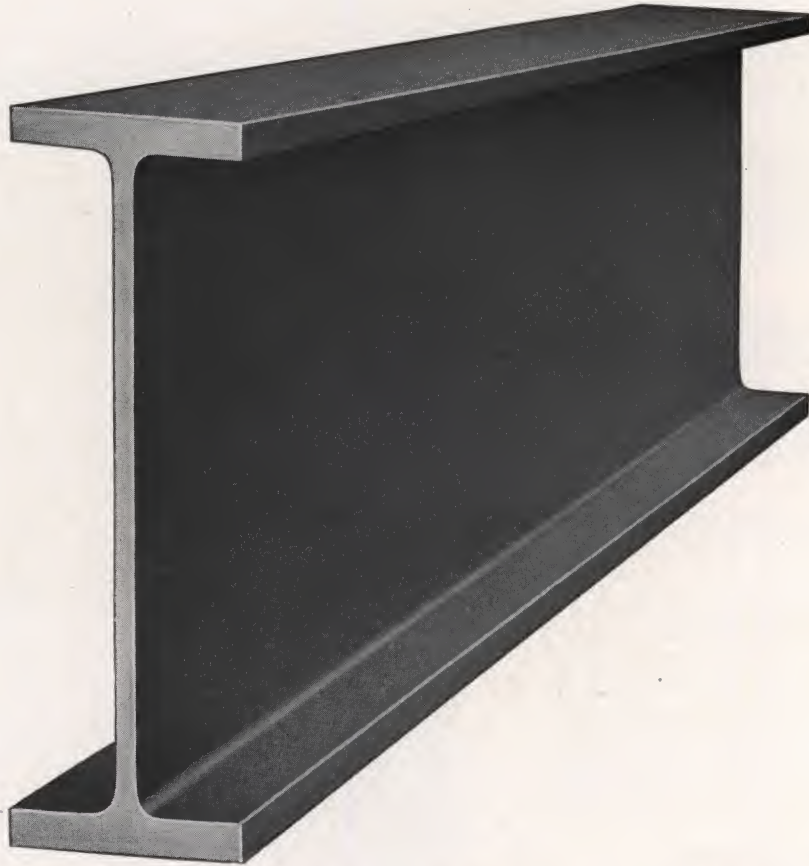


COMPACT ELECTRIFICATION



RUBBER WHEEL  
DRIVE





## No. MD-1 RailMaster Track

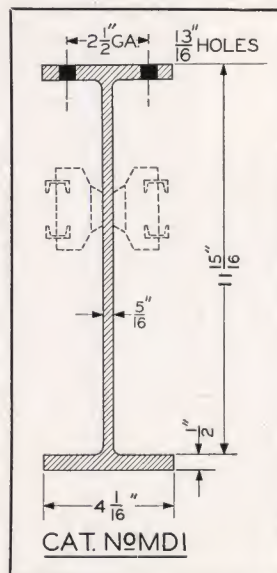
### TYPICAL TEST

Tensile Strength.....	84,560	Area.....	7.34 in. <sup>2</sup>
Elastic Limit.....	58,340	Moment of Inertia.....	176.24 in. <sup>4</sup>
Elongation.....	27.5	Section Modulus.....	28.43 in. <sup>3</sup>
Reduction.....	53.9	Brinell Hardness.....	160
Carbon.....	.40	Furnished in lengths up to.....	40 ft.
Manganese.....	.59	Weight per Foot.....	25 Lbs.
Silicon.....	.15	Finish.....	Green Enamel

RailMaster Track is a special rail section of high carbon-manganese steel rolled to our specifications.

The manganese content provides a dense, uniform, fine-textured steel of great tensile strength. This alloy is not only especially suited to carrying rolling wheel loads but it is also more than one-third stronger than ordinary steel as a load carrying member.

This section offers all the advantages of rigidity for carrying loads over long spans with economical hanger spacing. At the

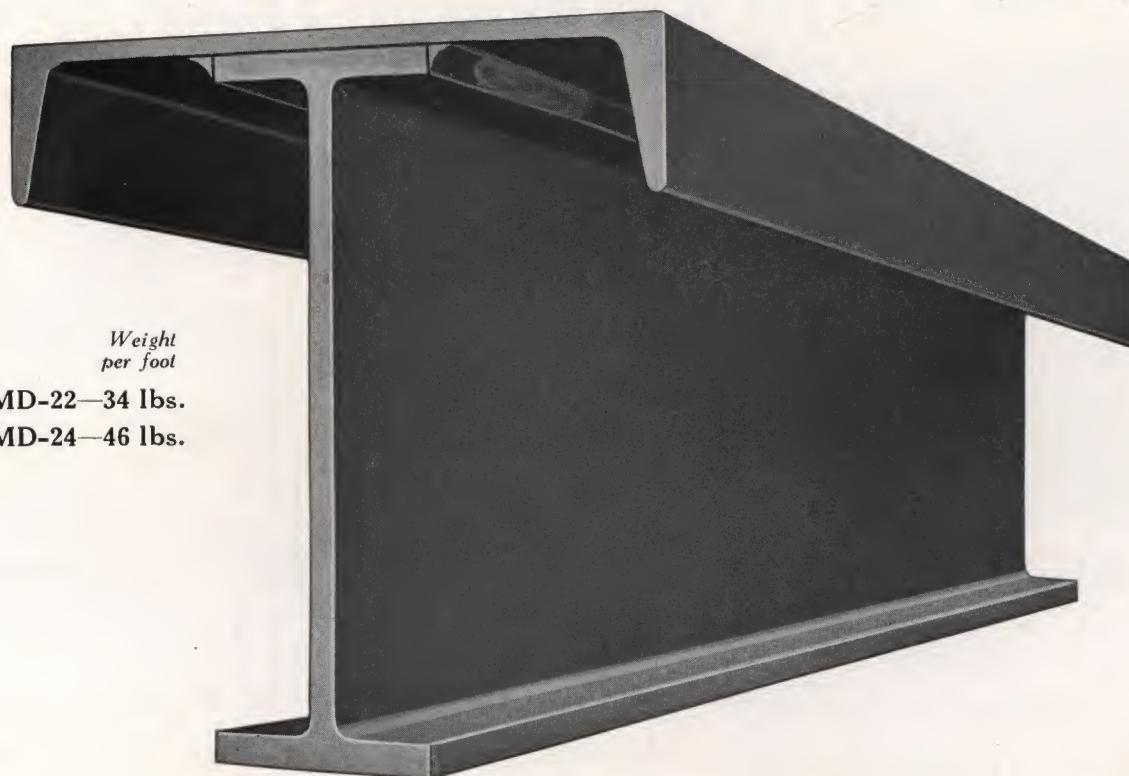


same time it provides a flat tread for accurate bearing of trolley wheels, assuring easy movement of carriers.

The combination of carbon and manganese in this steel provides a hard, uniform rail which will not peen down under the action of trolley wheels. The heavy flanges of this hard steel will not wear nor roll down in service.

See page 130 for load table covering all RailMaster track section and page 234 for additional detail.





*Weight  
per foot*

No. MD-22—34 lbs.

No. MD-24—46 lbs.

## RailMaster Capped Rail

### SPECIFICATIONS

Material Specifications: Same as listed on page 128 covering No. MD-1 RailMaster Track.

Load Tables shown on page 130 give technical data for selecting proper section to carry loads within the limits indicated.

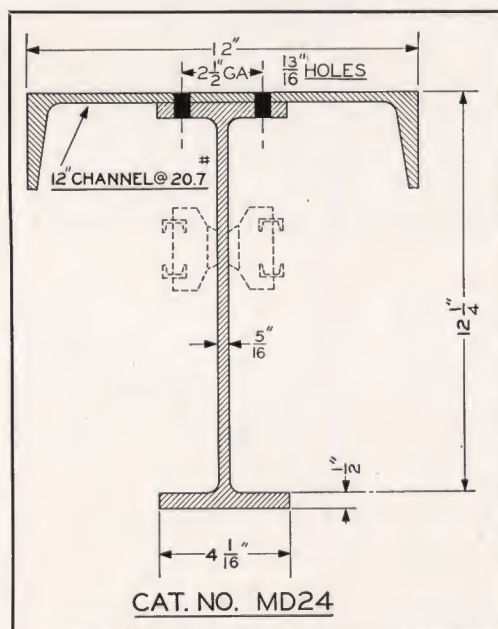
Dimensions of various sections given in drawings which accompany tables.

Sections furnished in lengths up to 40 feet. Used for straight runs only with RailMaster Curves described on page 134.

All Capped Rails consist of a section of No. MD-1 Track as described on page 123, with a channel welded to the top flange to provide sufficient stiffness for handling heavy loads over long spans. Dimensions of this cap depend upon the span and load to be carried. See table on page 130.

The economy of this type of rail is obvious. The heavy, hard track furnishes resistance to the action of trolley wheels, while the cap, containing a relatively small amount of steel, stiffens the section greatly increasing its capacity by keeping the ratio of slenderness in balance.

Usually caps are discontinued at



supports for a few inches to permit suspension directly from the No. MD-1 Section. Sometimes, where convenience requires, they are butted together. In other cases, where spans are long and loads permit, it may be possible to obtain the required strength by capping only the middle portion of the span.

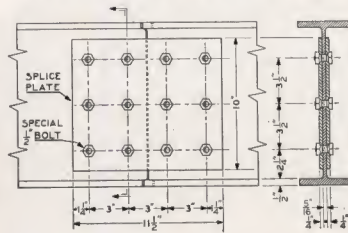
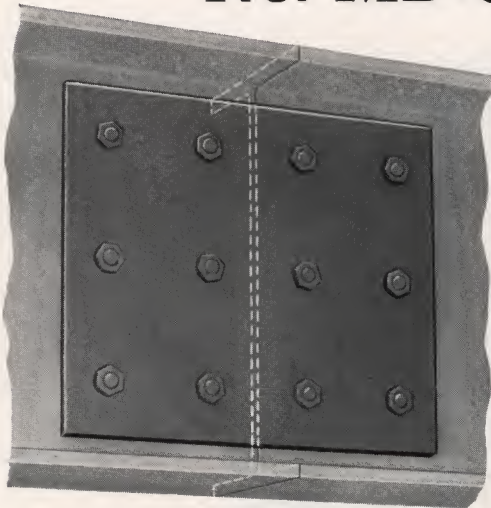
When loads are heavy and spans long, the cap may be extended over the splice and rigidly bolted to the adjacent rail to develop continuous beam action. See figure 234-A on page 234 for complete detail.

The same track splice described on the following page is used for joining the No. MD-1 section of all capped rails.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# No. MD-6 RailMaster Track Splice



## SPECIFICATIONS

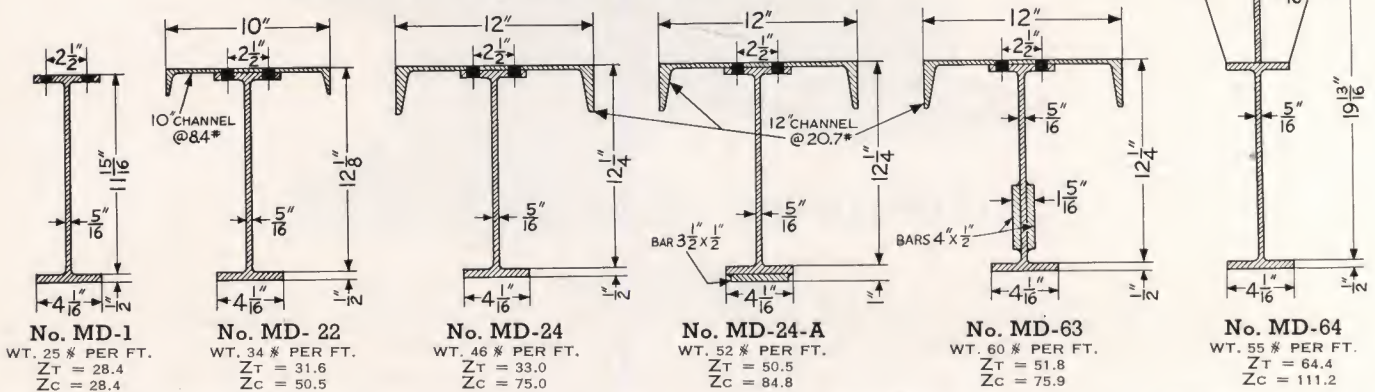
**Material:**  $\frac{1}{4}$ " Steel Plate.  
**Splice Plate Holes:** Jig drilled and countersunk.  
**Bolts:**  $\frac{1}{2}$ " Conical Hexagon Head.  
**Nuts:**  $\frac{1}{2}$ " Conical Hexagon.  
**Weight:**  $13\frac{1}{2}$  lbs. per set.  
**Finish:** Green Enamel.

Splice plates are mounted on each side of the rail web and held by twelve special conical bolts and nuts fitted into countersunk holes. Track connections are thereby held in accurate relation. Track must be supported on both sides of splice plates for full load reaction.

Edges of flanges are ground to accurate gauge for uniformity of flanges at all splices.

## RAILMASTER TRACK SECTIONS

NOTE: All Top Flange Holes  $13/16$ "



## LOAD TABLE FOR RAILMASTER SECTIONS

LATERALLY FREE

CONCENTRATED LOADS  
BEAM WEIGHTS DEDUCTED  
SPANS IN FEET

$f = 20,000^*$

	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
MD-64	41800	35440	30270	26400	23350	20900	18900	17220	15800	14550	13010					
MD-63	34230	28400	24240	21100	18640	16670	15040	13700	12500	*11500	*10600	*9850	*9130	*8410	*7780	*7140
MD-24A	33400	27740	23680	20620	18230	16300	14730	13400	12270	11300	10440	*9700	*9000	*8400	*7880	*7400
MD-24	21770	18050	15400	13380	11800	10540	9500	8620	7850	7200	6650	6150	*5700	*5300	*4930	*4680
MD-22	20890	17360	14810	12900	11400	10200	9230	8370	7660	7060	*6510	*6060				
PARTIALLY CAPPED LENGTH OF CAPPING	22															
	21											5810	4300			
	20											5050	3730			
	19										5950	4420				
	18									7050	5180	3860				
	17									6110	4530					
	16								7200	5270	4000					
	15							8300	6320	4700						
	14							7420	5550	4150						
	13						8800	6460	4890							
	12					10020	7700	5720	4440							
	11					9110	6760	5030								
	10				10920	8070	5960	4500								
	9				12930	9380	7020	5320								
	8			14880	11340	8370	6250	4750								
	7			13880	10350	7460	5600									
	6		17080	12260	8970	6630	5040									
	5	21050	14940	10840	7970	6000	4550									
	4	18350	13350	9850	7250	5450										
MD-1	14030	10150	7500	5620	4280											

VALUES LISTED BELOW  
ZIG-ZAG LINE HAVE A RATIO  
OF OVER 40 FOR  $1/b$  AND SHOULD  
BE CHECKED CAREFULLY FOR  
SIDE THRUSTS

\*LOADINGS INDICATED WITH AN (\*) HAVE DEFLECTIONS OF MORE THAN  $1/400$  OF THE SPAN.  
 †LOADINGS INDICATED WITH A (†) HAVE DEFLECTIONS OF MORE THAN  $1/360$  OF THE SPAN.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

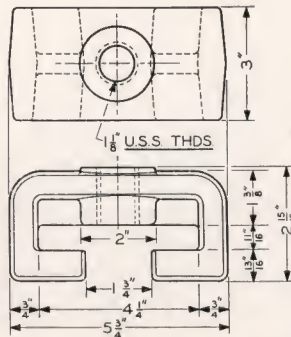


## No. MD-4 RailMaster Suspension Clamp



No. MD-4 Clamp

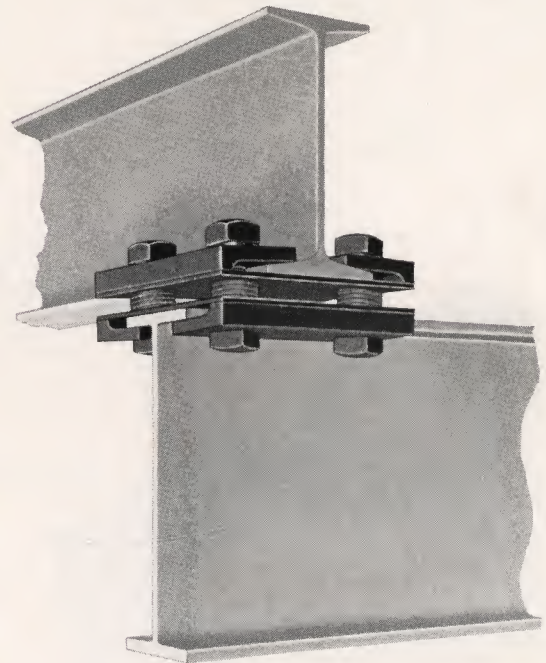
Suspension Clamp with hanger bolt for supporting No. MD-1 RailMaster Track.



Suspension Clamp No. MD-4 is a drop forging for connection to hanger bolts up to  $1\frac{1}{4}$ " in diameter. Clamps allow ample clearance for the rail flanges with more than an inch grip under each side of flange. Hanger connection holes are drilled through and threaded so that suspension bolt may be locked against top of the beam. This clamp must be used in pairs at rail splices. Minimum thickness of forging is  $\frac{3}{4}$ ", providing load bearing strength in excess of 8000 pounds. Finish: Green Enamel. Weight: 9 pounds.

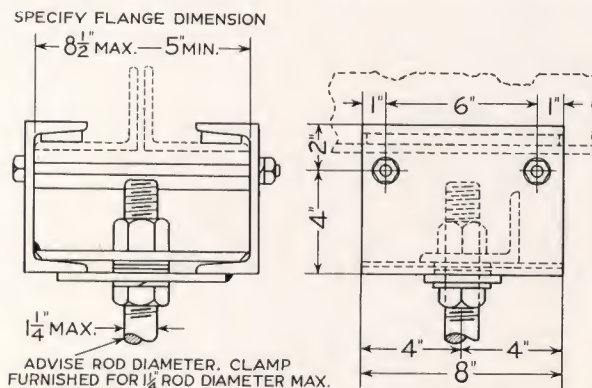
## No. MD-40 Universal Clamp Assembly

This assembly is used where RailMaster Track must be clamped to structural beams crossing the line of track at right angles. Clamps are fabricated from  $\frac{1}{2}$ " steel stock, drilled for  $\frac{3}{4}$ " bolts and assembled with  $\frac{1}{8}$ " tie plates. Standard assembly includes steel washers to allow for  $\frac{1}{2}$ " vertical adjustment. When ordering specify width and depth of superstructure beam flange. Assembly includes four clamps, two tie plates, sixteen  $\frac{1}{8}$ " washers and four bolts, nuts and lock washers. Weight 16 pounds. Finish: Green Enamel.



See pages 132 and 253 for additional illustrations of various methods and fittings for RailMaster Track Suspension.

## No. MD-52 RailMaster Suspension Clamp



This clamp is used for attaching a single bolt suspension rod to steel beam superstructure. It is fabricated from heavy steel channels with two  $\frac{1}{2}$ " bolts clamping the side channels together. When ordering, specify size of suspension rod as well as width of superstructure beam flange.

Weight 20 pounds. Finish: Green Enamel.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



## No. MD-49 Suspension Clamp

Twin forgings bolted together form this adjustable saddle-type clamp for use where it is desirable to suspend RailMaster track from two  $\frac{7}{8}$ " bolts. While considerable lateral adjustment can be made, note restrictions in Fig. 132A with reference to off-center suspension. When used at track splice a clamp is required at each side of splice. Rigid ties should be installed between adjacent runways at regular intervals when this clamp is used for supporting runways for directly interlocking cranes. Finish: Green Enamel. Weight: 12 pounds.

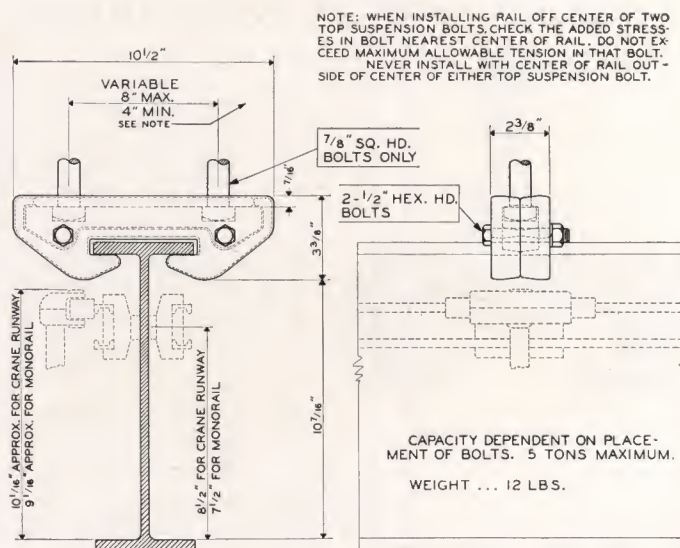


Fig. 132A

## No. MD-51 Suspension Clamp

This clamp is an assembly of steel forgings offering great strength with provision for lateral adjustment. When rail is mounted off-center note restrictions mentioned in Fig. 132A which apply. It offers easy application to timber superstructure where a wide range of bolt spacing beyond 8 inches with saddle type arrangement is required. Note\*—1" and  $1\frac{1}{2}$ " bolts will not allow clearance for MH-3 and MH-48 Trolley Collectors on Crane Runway Electrification. Finish: Green Enamel. Weight: 32 pounds.

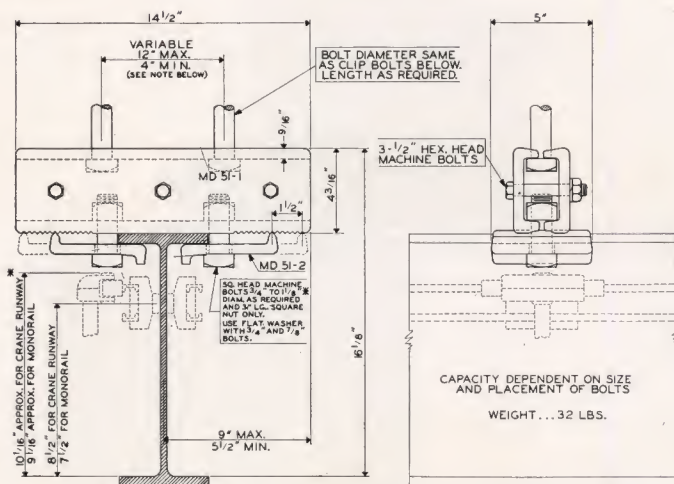


Fig. 132B

## No. MD-48 Suspension Clamp

For close-up, rigid suspension of RailMaster tracks or crane runways, particularly to parallel beams, this clamp offers easy and accurate erection. Washers or spacers furnish considerable vertical adjustment while slotted holes in the supporting beam allow lateral correction. This forged clamp can be used either single or double. Double clamps must be used at rail splices. Note\*—Gage must be specified with orders for double clamps. Where gage is over  $5\frac{1}{2}$ " use two single clamps. Finish: Green Enamel. Weight specified in scale.

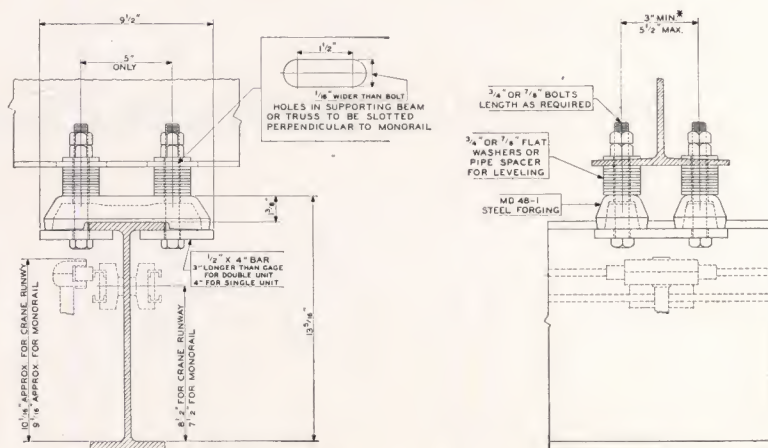
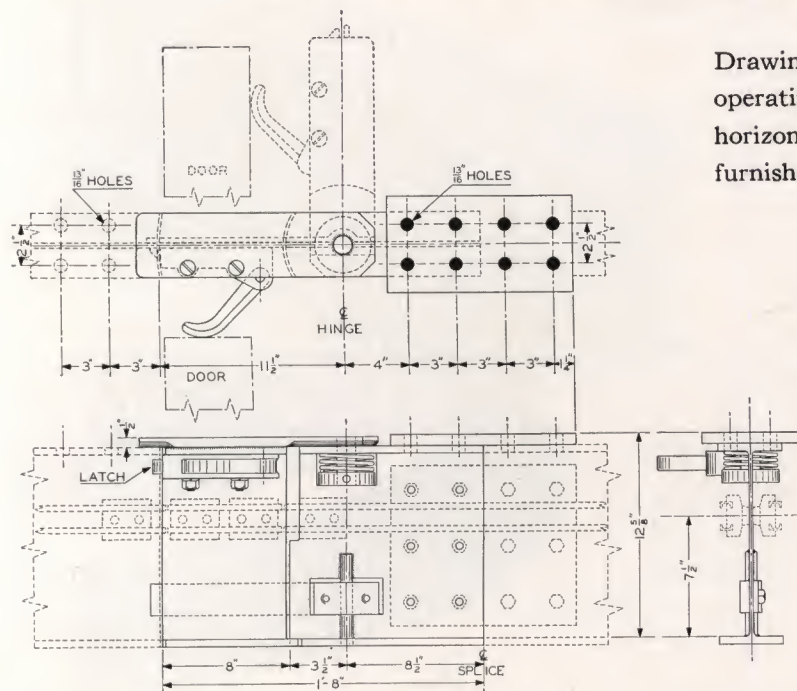


Fig. 132C

	Single Unit		Double Unit	
	Capacity	Weight	Capacity	Weight
$\frac{3}{4}$ " Bolt	6000 lbs.	15 lbs.	12000 lbs.	28 lbs.
$\frac{7}{8}$ " Bolt	8000 lbs.	16 lbs.	16000 lbs.	30 lbs.



## No. MJ-1 RailMaster Track Opener



Drawing to the left shows detail of construction and operating features of the RailMaster Track Opener for horizontally mounted fire doors. Assemblies can be furnished for vertically operating doors.

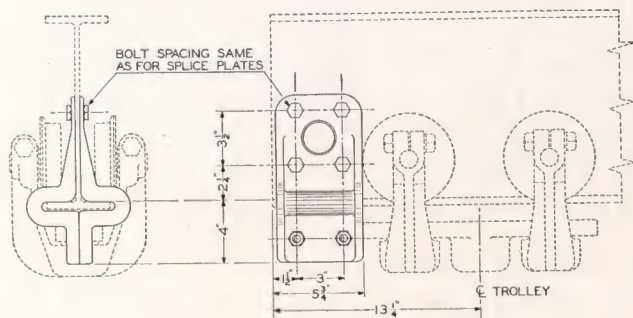
Contact of door against lever arm will release the latch, permitting track section to swing out and pass door through to closed position. Swing section of track remains open as long as door is closed, but returns and is latched to original track position when door is opened. Track opener can be electrified as indicated by the dotted outlines in drawing to the left. Weight: 95 pounds.

## No. MD-3 RailMaster End Stop

Two heavy malleable castings are bolted together through the splice plate holes in the rail web to form a sturdy protection at the ends of all RailMaster tracks and craneways. Trolleys are stopped by contact of load bar against end stop. End stops are furnished complete with bolts and nuts.

**Finish:** Green Enamel

**Weight:** 9 1/2 pounds.



No. MD-3 End Stop

Illustrating end stop taking impact on trolley load bar.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished on working drawings.*



## RailMaster Standard Curves

No. MD-9	Right or Left	210 lbs.
No. MD-10	Left Hand	181 lbs.
No. MD-11	Right Hand	181 lbs.
No. MD-12	Right or Left	180 lbs.
No. MD-13	Right Hand	145 lbs.
No. MD-14	Left Hand	145 lbs.
No. MD-15	Right or Left	85 lbs.
No. MD-16	Right or Left	130 lbs.

RailMaster Standard Curves are bent to a 4 foot radius and cut to fit switch or track layout requirements. The numbers listed above cover curves used in standard groupings illustrated on pages 240 and 241 where complete dimensional data is also given.

RailMaster Curves are bent to a true radius with smooth, flat flanges free from kinks or roughness. Curves can be furnished to meet special requirements being specially bent at a nominal bending charge.



## RailMaster Electrified Standard Curves

No. MDH-9	Right or Left	250 lbs.
No. MDH-10	Left Hand	220 lbs.
No. MDH-11	Right Hand	220 lbs.
No. MDH-12	Right or Left	215 lbs.
No. MDH-13	Right Hand	175 lbs.
No. MDH-14	Left Hand	175 lbs.
No. MDH-15	Right or Left	105 lbs.
No. MDH-16	Right or Left	144 lbs.

RailMaster Track Curves are electrified by the same compact method used on all American MonoRail equipment and described in detail on pages 85 to 87. Bus bars are bent to the exact radius of each curve and are mounted to the web of the rail by bakelite insulator blocks.

The letter "H" added into the catalog numbers listed above indicates that the curve is furnished with electrification. Curve layouts on pages 240 and 241 apply to both electrified and non-electrified curves.

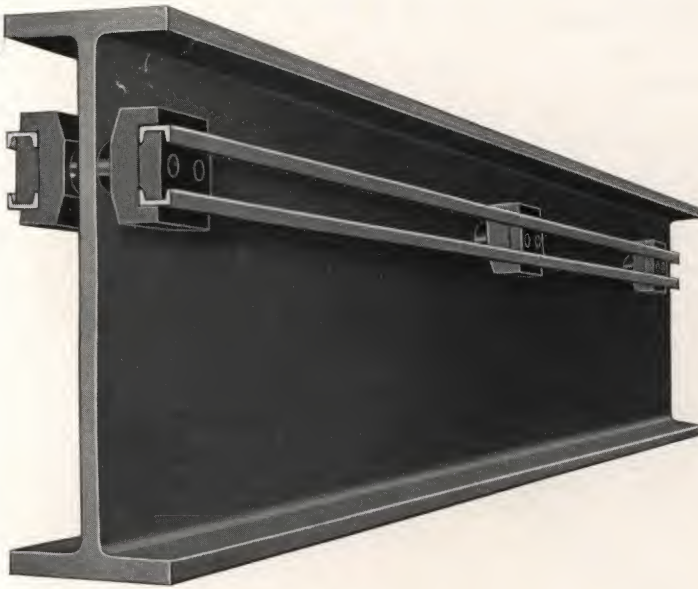




## No. MH-30 RailMaster Track Electrification

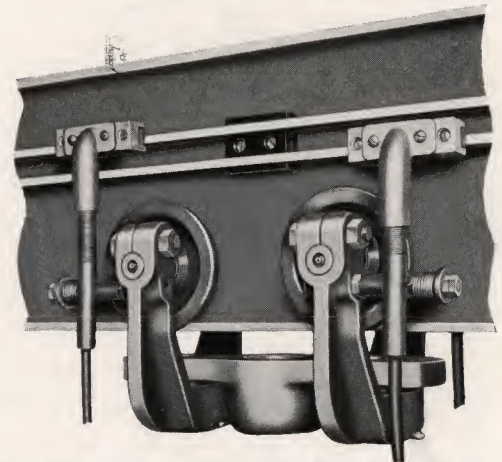
All the advantages of the American MonoRail System of rigid bus bar electrification as described on pages 85 to 87, apply as effectively in bringing current to power operated equipment on RailMaster Track, Switches, Cranes and MonoTractors. The method is identical, the only difference being in the form of the bakelite insulators. RailMaster Electrification uses insulator No. MH-1 throughout the system.

*Hand operated RailMaster systems now in place can be electrified without costly changes from data on file covering the original installation.*



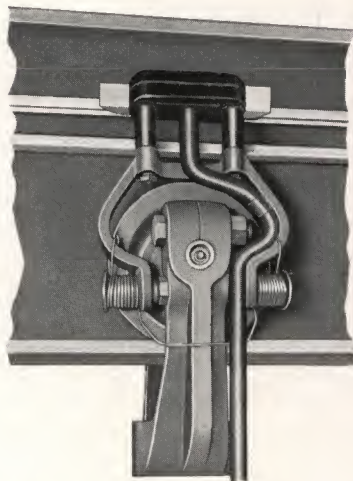
## RailMaster Electrified Trolleys

Current collectors for RailMaster Electrified Trolleys are mounted as shown in illustration on this page and in the drawings below. Contact shoes of gun metal are advantageously adapted for this use because of their electrical conductivity and resistance to wear. Adjustable spring tension keeps the gun metal shoes always in contact with the proper conductor. The large contact area of these shoes not only picks up current efficiently, but keeps the bus bar clean by its sweeping action.



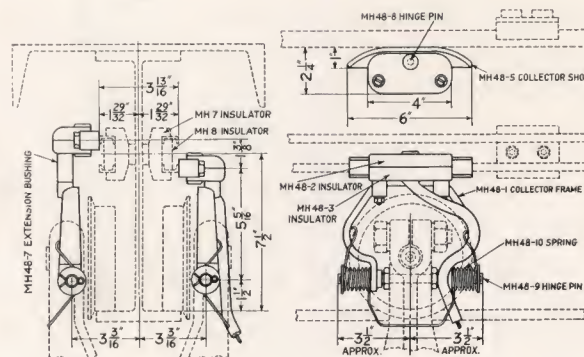
No. MH-3 Long Collector (Left Hand)      No. MH-2 Short Collector (Right Hand)

When ordering collectors, specify above numbers and indicate whether for right or left hand mountings.

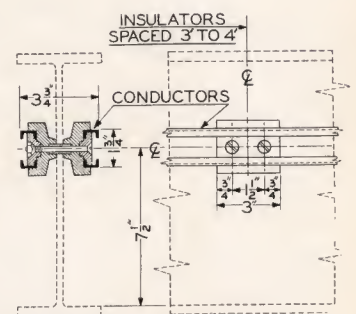


No. MH-48 RailMaster Collector

This new double spring collector is furnished on all RailMaster electrified trolleys. Write for certified dimension drawings.



No. MH-48 RailMaster Collector

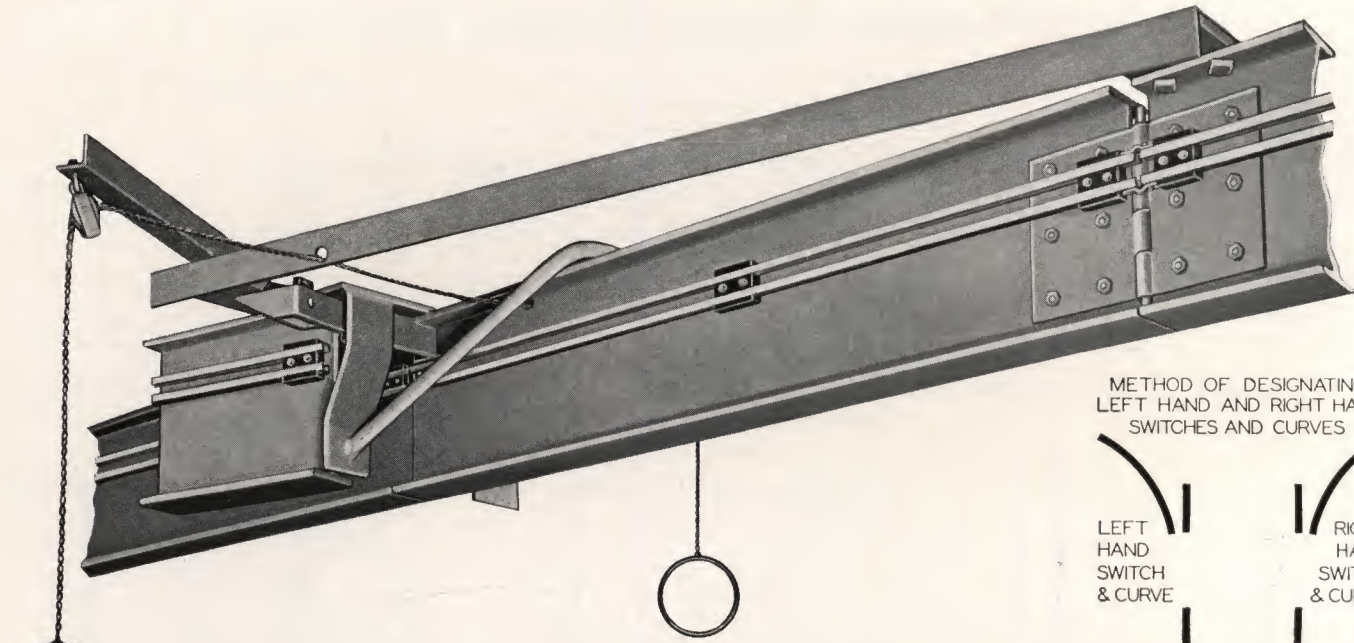


No. MH-30 RailMaster Track Electrification

NOTE: FOR USE ON CRANE RUNWAYS USE NO. MH-9 OR MH-10 ELECTRIFICATION

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





### METHOD OF DESIGNATING LEFT HAND AND RIGHT HAND SWITCHES AND CURVES

### LEFT HAND SWITCH & CURVE

## RIGHT HAND SWITCH & CURVE

# RailMaster Two-Way Tongue Switch

No. MB-1—Right Hand  
No. MB-11—Left Hand

No. MBH-1—Electrified Right Hand  
No. MBH-11—Electrified Left Hand

## SPECIFICATIONS

**Mounting:** Through heavy angle frame.

**Bearings:** Heavy steel rollers.

**Safety Guards:** Heavy steel plate baffles.

**Pull Chains:** Heavy Machine Chain with  $\frac{1}{4}$ " Ring Handles. Length as required.

**Electrification:** Wiring carried around switch in heavy rubber covered jumpers. Current fed to switch tongue by phosphor-bronze spring fingers. Conductor bars locked against creepage. No field wiring necessary for erection.

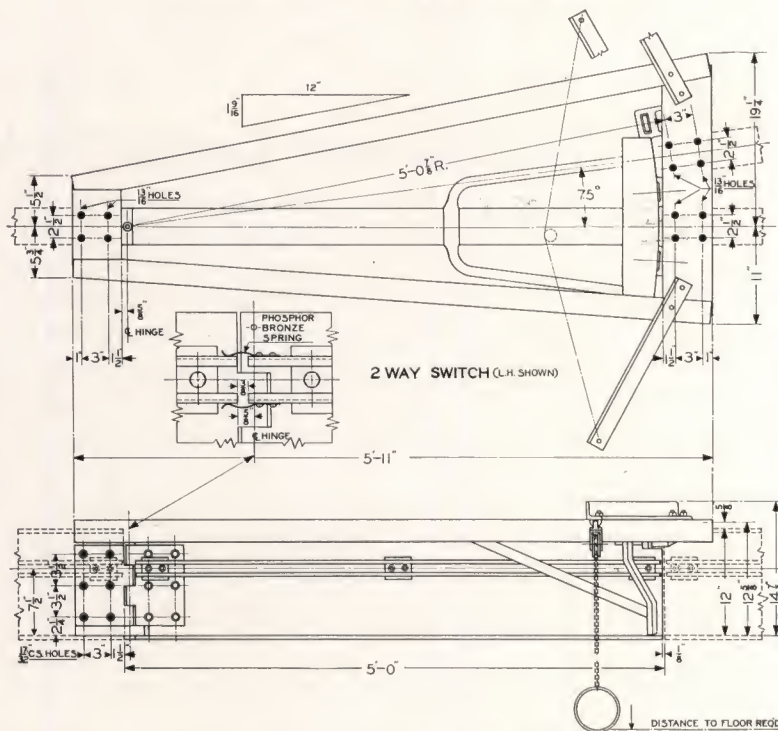
**Weight:** 365 pounds. **Finish:** Green Enamel.

Considering the five ton capacity of the Rail-Master Tongue Switch, its operation is remarkably easy. The heavy tongue, mounted on steel plate hinges with front end riding on steel rollers, swings with a light pull on the pendant chain into exact position where it latches automatically in place. Track flanges are thereby held in close register with each other for free passage of trolleys.

Throw of the switch from one position to another is only  $7\frac{1}{2}$ ", making possible extremely compact spacing of such heavy duty trackage. Open track ends are guarded with steel plate baffles mounted on the switch tongue. Rigid conductor bar electrification is carried on the switch tongue by phosphor-bronze spring fingers for through service of power operated equipment.

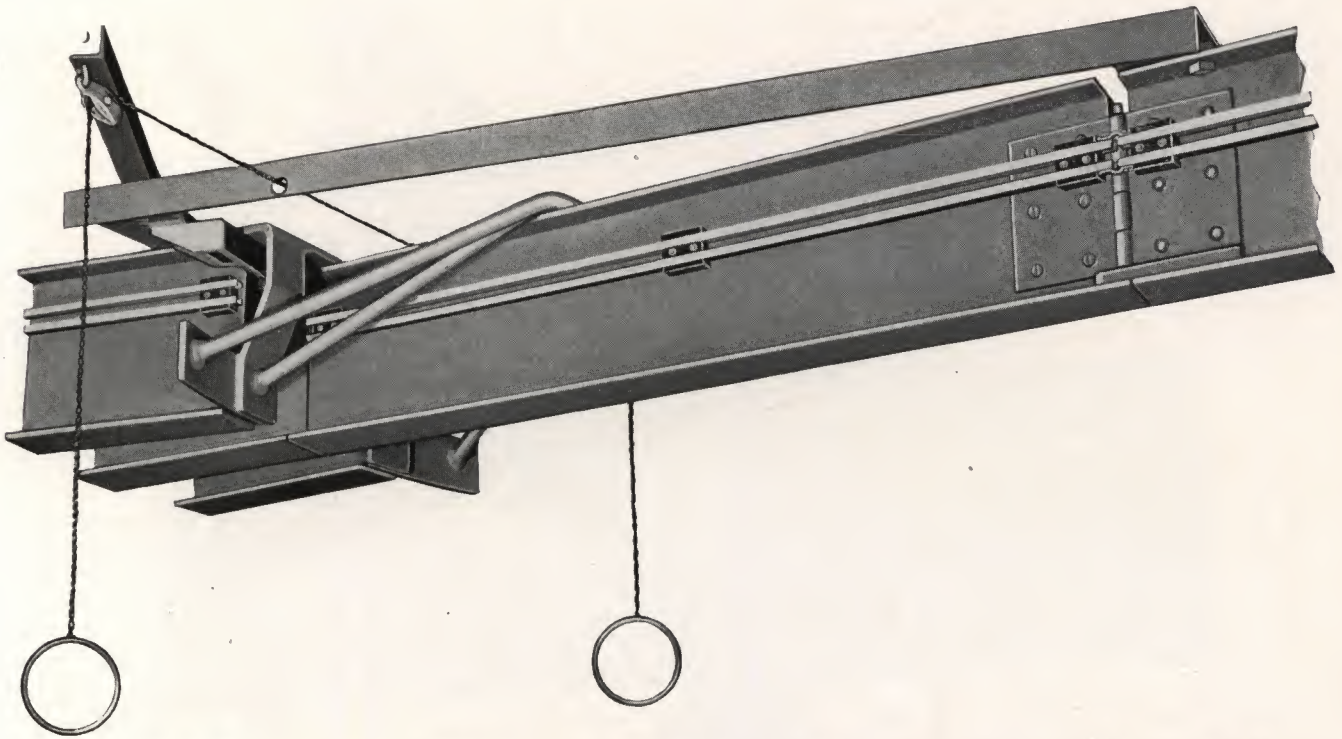
See page 240 showing details of RailMaster Curves for use with various Tongue Switch groupings.

Give distance from floor to track for proper switch chain length.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





# RailMaster Three-Way Tongue Switch

No. MB-12—Non-Electrified

No. MBH-12—Electrified

## SPECIFICATIONS

**Mounting:** Through heavy angle frame.

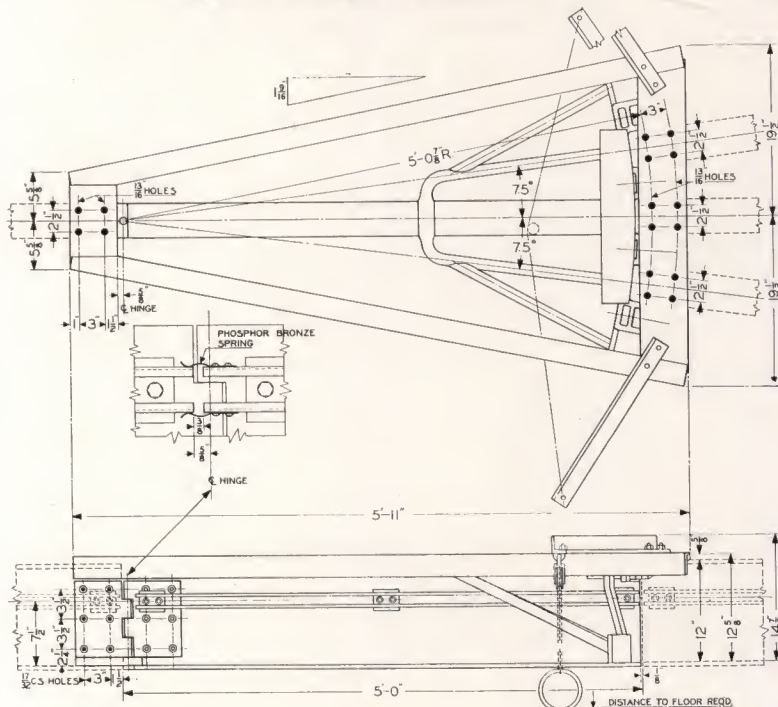
**Bearings:** Heavy steel rollers.

**Safety Guards:** Heavy steel plate baffles.

**Pull Chains:** Heavy machine chain with  $\frac{1}{4}$ " ring handles. Length as required.

**Electrification:** Wiring carried around switch in heavy rubber covered jumpers. Current fed to switch tongue by phosphor-bronze spring fingers. Conductor bars locked against creepage. No field wiring necessary for erection.

**Weight:** 400 pounds. **Finish:** Green Enamel.



The Three-Way RailMaster Switch illustrated above embodies all the advantages of strength and ease of operation described in connection with the Two-Way Switch.

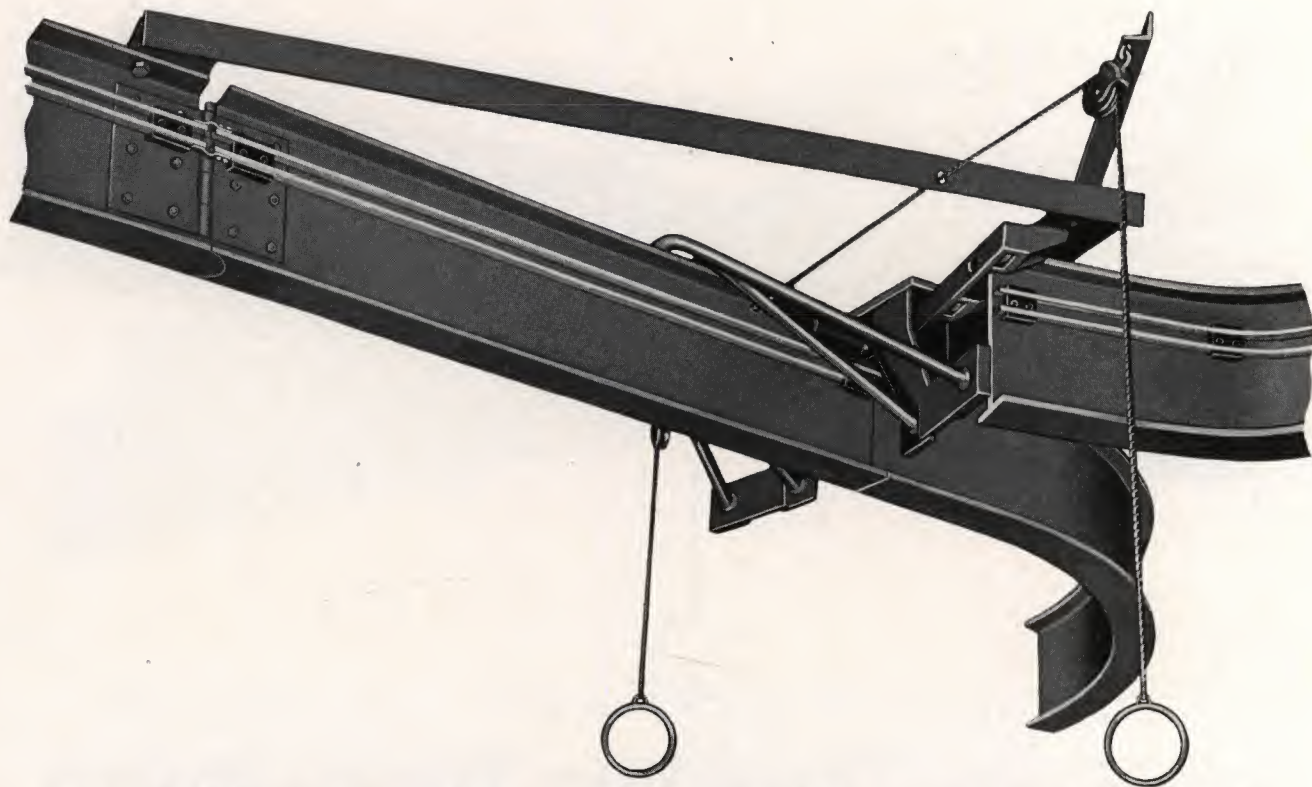
An important feature of the three-way switch is the operation of the latch bolt which can spot the tongue in the middle position requiring only slight pull and release of the chain. Through swing of the tongue can be obtained by holding the latch bolt out until the extreme position is reached.

Adequate protection covers all open track ends. Electrification is applied in similar manner to the two-way switch. Manually operated switches can be converted for power operation without costly structural changes.

Give dimensions from floor to track for proper switch chain length. See page 240 for various switch groupings and curves.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





# RailMaster Wye Type Tongue Switch

No. MB-13—Non-Electrified

No. MBH-13—Electrified

## SPECIFICATIONS

**Mounting:** Through heavy angle frame.

**Bearings:** Heavy steel rollers.

**Safety Guards:** Heavy steel plate baffles.

**Pull Chains:** Heavy machine chain with  $\frac{1}{4}$ " ring handles. Length as required.

**Electrification:** Wiring carried around switch in heavy rubber covered jumpers. Current fed to switch tongue by phosphor-bronze spring fingers. Conductor bars locked against creepage. No field wiring necessary for erection.

**Weight:** 400 pounds. **Finish:** Green Enamel.

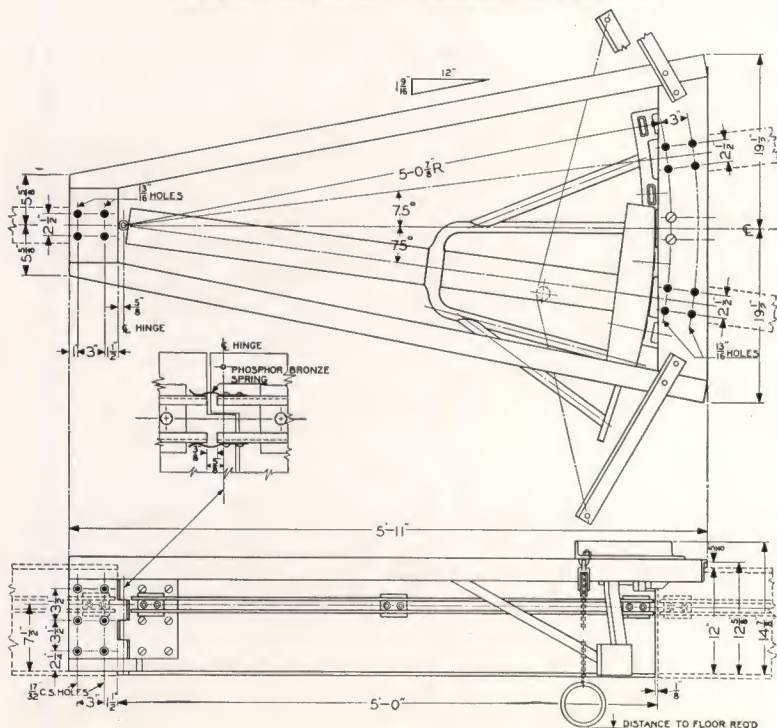
This switch furnishes connection to curves diverging on each side of a single track. It includes all the advantages of the tongue type switches previously described such as load carrying capacity, easy operation and smooth travel of trolleys.

Curves for connection to this switch are shown in the illustrations on page 240 where complete dimensional data will be found.

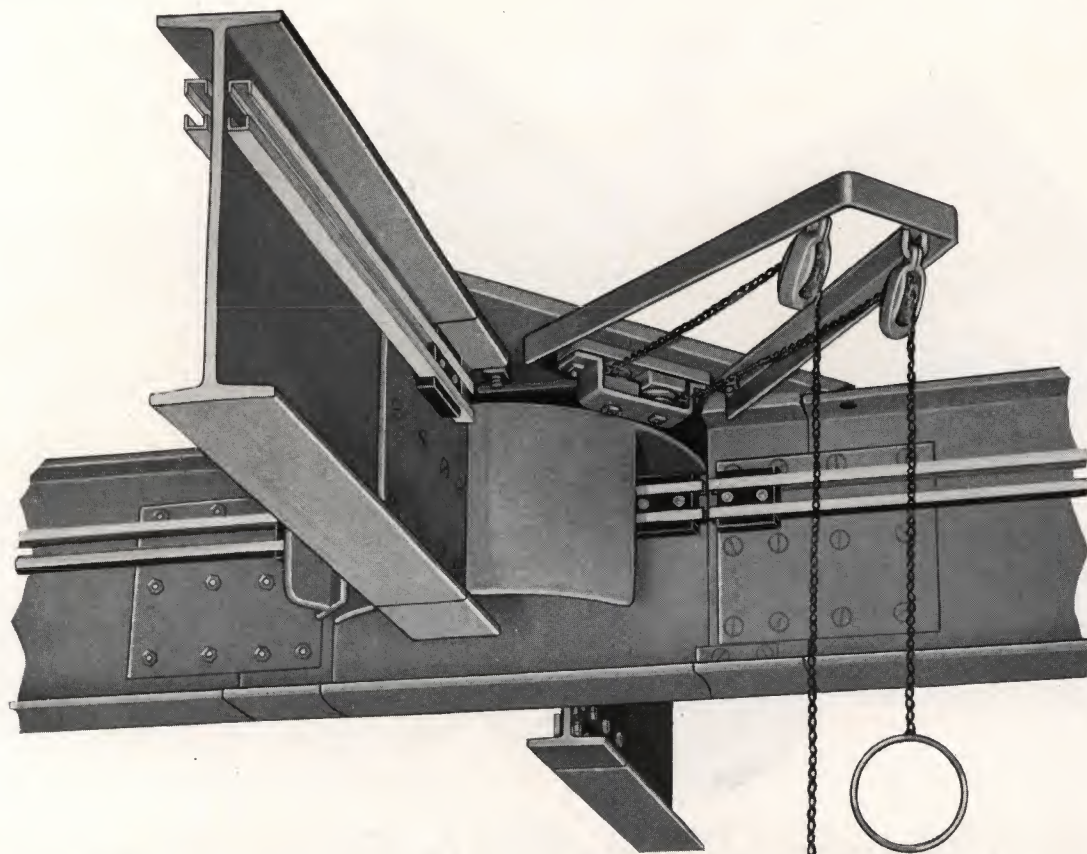
Compact electrification furnishes through service for power operated units and can be applied to existing hand operated systems with no structural revisions.

Give distance from floor to track for proper switch chain length.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*







# RailMaster 18" Cross Track Switch

No. MC-7—Non-Electrified

No. MC-6—Electrified

## SPECIFICATIONS

Swing Section accommodates all 2 and 4-wheel RailMaster Trolleys.

Mounting:  $\frac{5}{8}$ " Steel Plate.

Bearings: Swing section carried on Timken roller bearings.

Safety Guards: Heavy malleable iron.

Connecting Stubs: Track stubs shaped radially for smooth joint and furnished with splice plates for connection.

Pull Chains: Heavy Machine Chain with  $\frac{1}{4}$ " ring handles. Length as required.

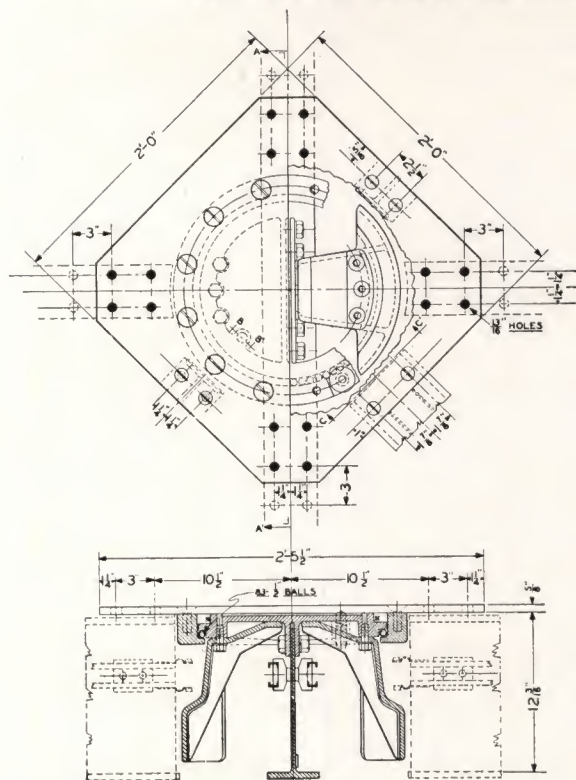
Electrification: Wiring carried around turntable in standard conduit. Conductors on swing section connected with flexible rubber covered cable. Conductor locked against creepage. No field wiring necessary.

Weight: 265 pounds.

Finish: Green Enamel.

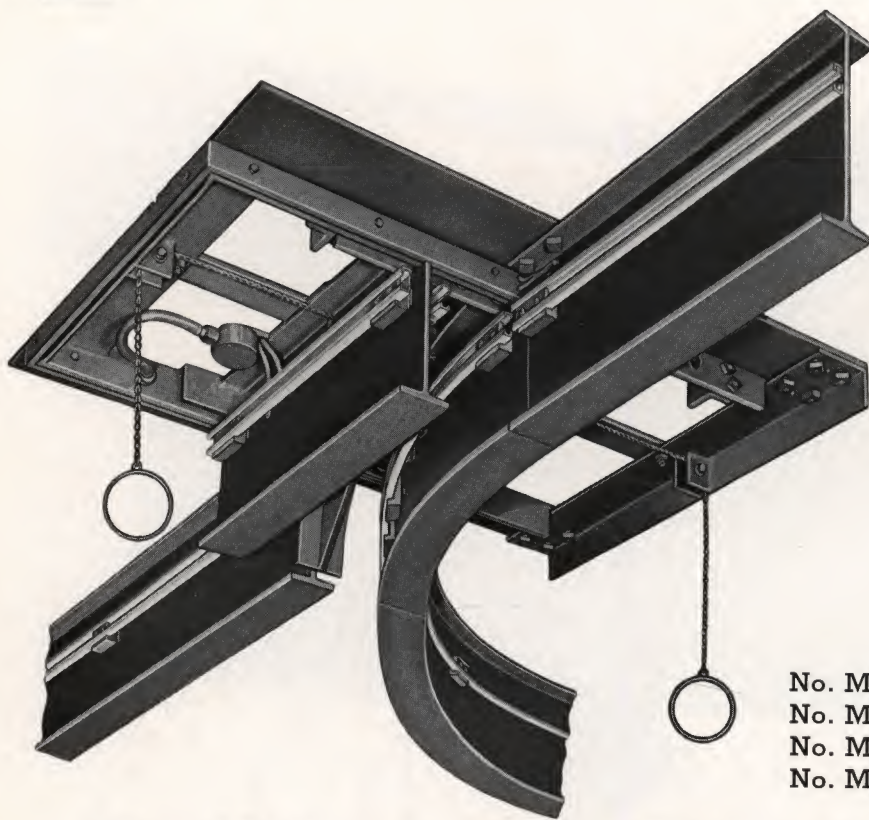
RailMaster Cross Track Switches provide facility for right angle crossing of two lines of track as well as transfer of RailMaster 4-wheel Trolleys from one track to another. Swing section latches definitely in each position. Open ends are automatically guarded in all positions. Switch turns easily on Timken roller thrust bearings. Splice plates and track stubs are furnished for connection to adjoining rails.

Electrified Cross Track Switches can be incorporated in track layouts, but such systems must be carefully checked to eliminate change of polarity in conductors. Give distance from floor to track for proper switch chain length.

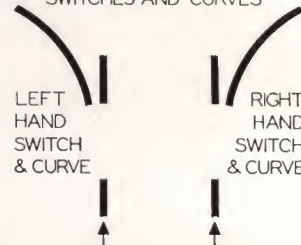


Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





METHOD OF DESIGNATING  
LEFT HAND AND RIGHT HAND  
SWITCHES AND CURVES



No. MB-30—Non-Electrified Right Hand  
No. MB-31—Non-Electrified Left Hand  
No. MBH-30—Electrified Right Hand  
No. MBH-31—Electrified Left Hand

## RailMaster Two-Way Glide Switch

### SPECIFICATIONS

**Mounting:** Through heavy angle frame.  
**Bearings:** Steel rollers with bronze bushings.  
**Latch:** Positive in all positions.  
**Guards:** Heavy baffles rigidly mounted.  
**Pull Chains:** Heavy machine chain with  $\frac{1}{4}$ " ring handles. Length as required.

**Electrification:** Wiring carried around switch in special channel conduit. Current wired to shift section with flexible heavy duty cable. Conductor bars locked against creepage. No field wiring necessary for erection.

**Weight:** 450 lbs.

**Finish:** Green Enamel.

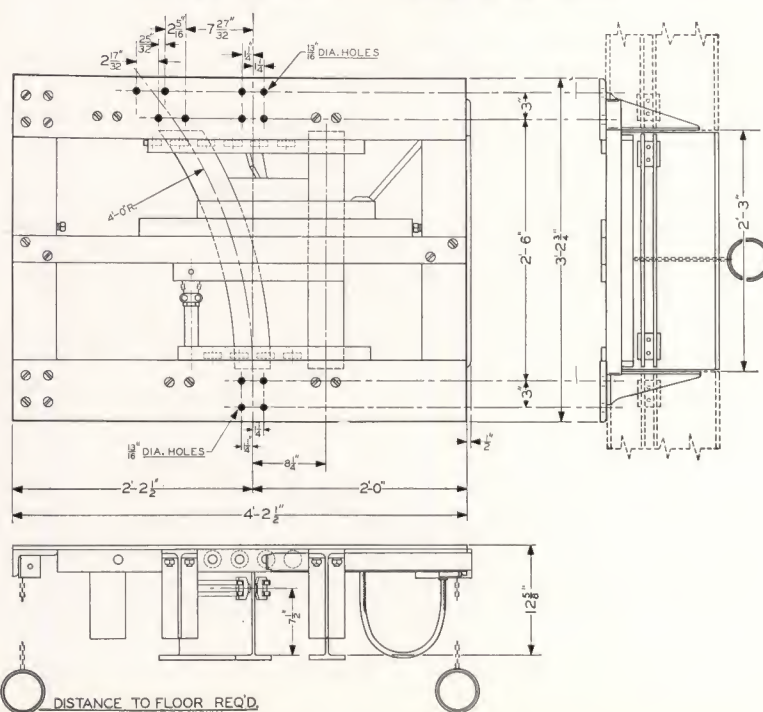
Glide Switches of the RailMaster line not only permit compact spacing of branch tracks but operate so easily that only a light pull on the pendant chain is required for shift to any position. This ease of operation is due to the method of mounting the entire shift section on steel rollers.

Holes are drilled in the switch frame for attaching the approaching track. This brings the track into exact relation to the shift section of the switch for smooth passage of trolleys.

Compact electrification of RailMaster switches provides through service for electrically operated carriers. Switch may be arranged for motor operation as shown in the line drawing on page 98.

For proper RailMaster curves connecting to the above switches refer to page 241 containing dimensional charts.

Give distance from floor to track for proper switch chain length.

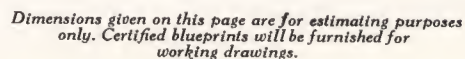


*Dimensions given on this page are for estimating purposes only.  
Certified blueprints will be furnished for working drawings.*



## No. MBH-33—Electrified

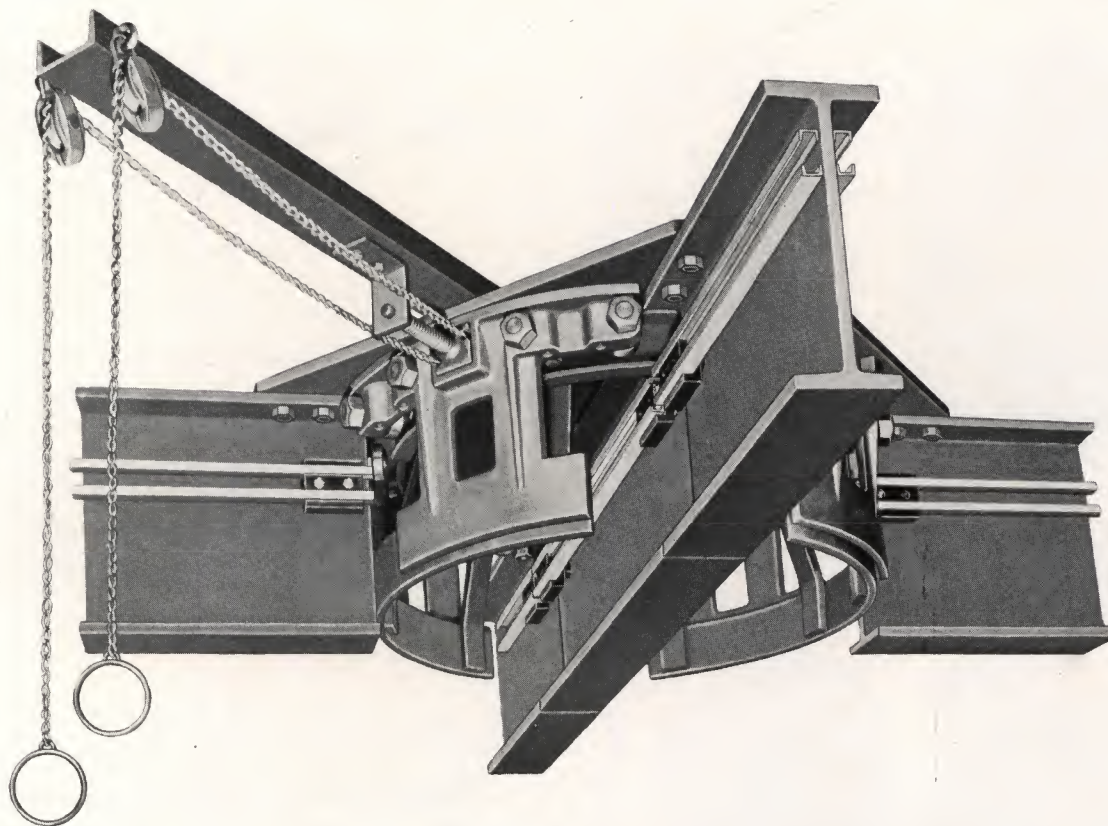
**Weight:** 565 pounds.    **Finish:** Green Enamel.











## RailMaster 27" Turntable

No. MC-4—Non-Electrified No. MC-2—Electrified

### SPECIFICATIONS

Swing section accommodates all 2 and 4-wheel RailMaster Trolleys.

**Mounting:** Heavy Steel Plate.

**Bearings:** Large ball bearings.

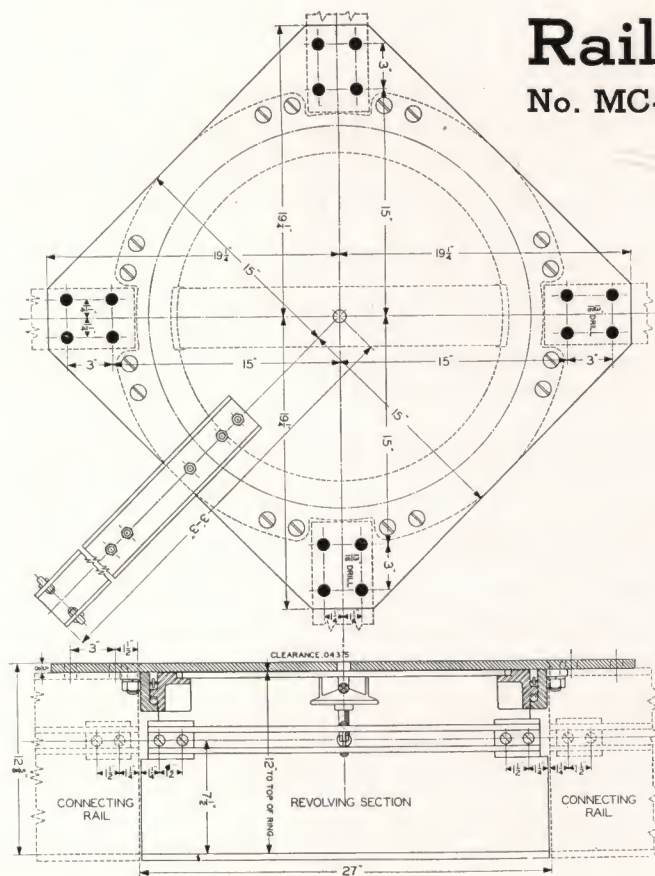
**Safety Guards:** Heavy malleable iron.

**Pull Chains:** Heavy machine chain with  $\frac{1}{4}$ " ring handles. Length as required.

**Electrification:** Wiring carried around switch in standard conduit. Current wired to swing section through flexible rubber covered cable. Conductor bars locked against creepage.

**Weight:** 340 pounds.

**Finish:** Green Enamel.



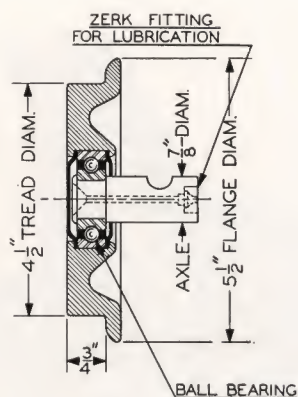
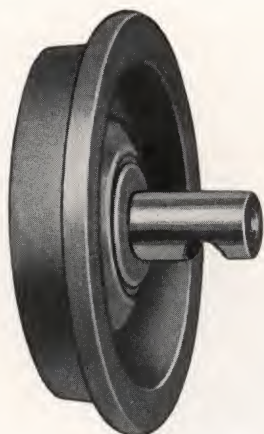
This 27" RailMaster turntable, while it offers all the advantages of the 18" cross track switch, shown on page 139, also provides additional swing bar length for swivelling special four-wheel carriers, such as the MonoTractor unit illustrated at the bottom of page 185.

Swing section rides on a row of large ball bearings distributed around the circumference of the ring to provide easy turning of heavy loads for transfer from one track to another.

Give distance from floor to track for proper switch rope length.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





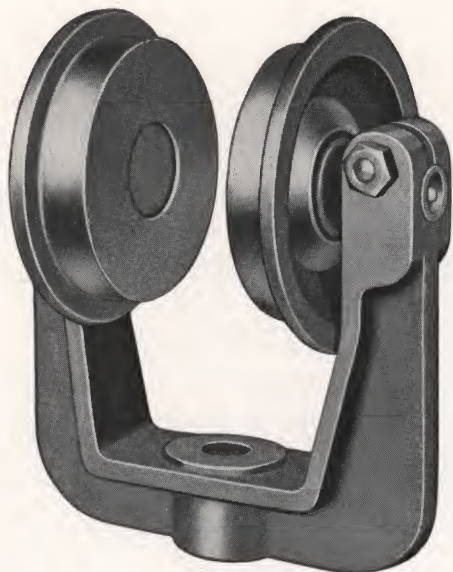
**No. MA-17 Trolley Wheel**

Drop forged wheels with hardened treads and precision bearings assure long wear and easy rolling. Cross-section drawing gives dimensions and assembly.

## No. MA-17 RailMaster Trolley Wheel

500 lb. Capacity

This forged wheel, with machined and hardened treads  $4\frac{1}{2}$ " in diameter by  $\frac{3}{4}$ " wide, was developed to carry average loads on RailMaster track. Single row New Departure precision ball bearings, mounted on steel axles  $\frac{7}{8}$ " in diameter, are lubricated through the axle with Zerk system. Wheel hubs are machined for accurate fit of bearings. Weight, 5 pounds.



## No. MA-2 RailMaster Two-Wheel Trolley

1000 lb. Capacity

### SPECIFICATIONS

**Wheels:** No. MA-17—Drop Forging, Hardened Tread.

**Wheel Bearings:** Single row New Departure precision ball.

**Yoke:** No. MA-16—Malleable Iron.

**Axles:** Machined Steel  $\frac{7}{8}$ " Diameter.

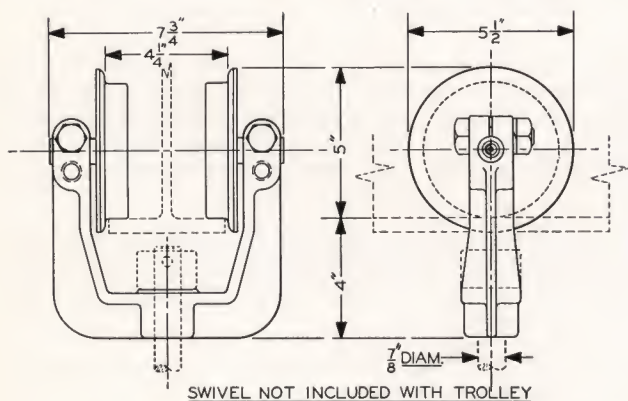
**Lubrication:** Through axle with Zerk fitting.

**Weight:** 16 pounds.

**Finish:** Green Enamel.

With a heavy malleable yoke holding wheels rigidly in relation to the track flange, full value of the wheel advantages described above are made available. Yokes are drilled for  $\frac{7}{8}$ " swivels or other load fittings which are illustrated on page 146 but not included in the price of the trolley.

This two-wheel trolley, when used in pairs applies excellently in carrying racks or other long load frames on a RailMaster track system.



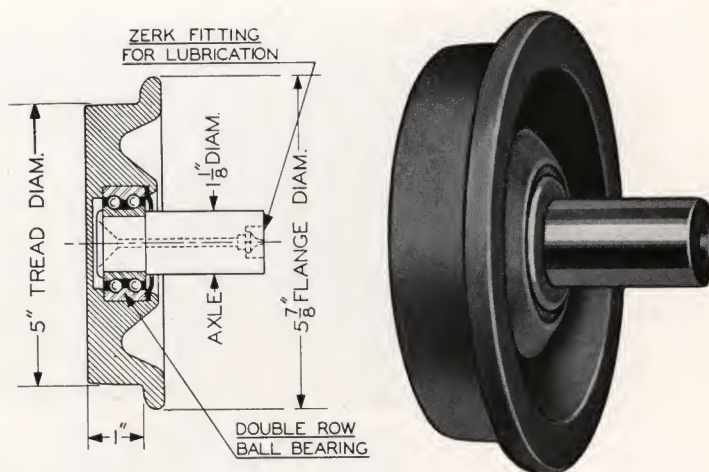
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



## No. MA-7 RailMaster Trolley Wheel

1500 lb. Capacity

Illustration and line drawing to the right show plainly the load bearing qualities of this 1500 lb. capacity wheel. Heavy wheel forgings are machined for accurate fit of New Departure, double row, precision ball bearings, which are mounted on  $1\frac{1}{8}$ " machined steel axles. Lubrication of bearings is accomplished through the axle by pressure system. Wheel treads are machined for proper seating on rail and to assure concentricity with bearings. Treads are hardened for long wear. Weight, 8 pounds.



No. MA-7 Trolley Wheel

Heavy forged wheel with hardened tread. Note double row precision ball bearings. Cross section drawing gives dimensions and assembly.

## No. MA-5N RailMaster Two-Wheel Trolley

2500 lb. Capacity

### SPECIFICATIONS

**Wheels:** No. MA-7 Drop Forging, Hardened Treads.

**Wheel Bearings:** New Departure, double row, precision ball.

**Yoke:** No. MA-6 Heavy Malleable Iron.

**Swivel Bearings:** Timken roller thrust with suppressor.

**Axle:** Machined Steel  $1\frac{1}{8}$ " diameter.

**Lubrication:** Through axle with Zerk fitting.

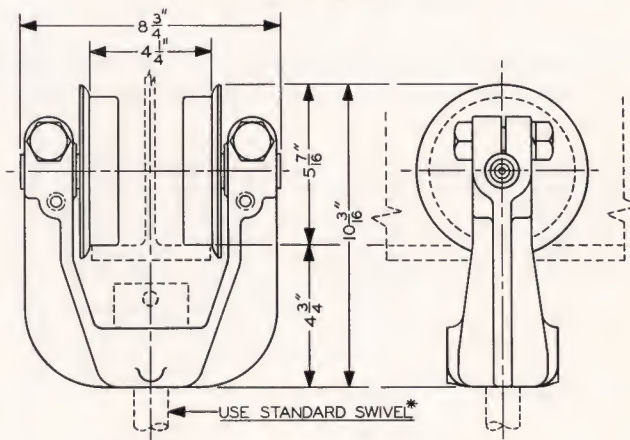
**Weight:** 30 pounds.

**Finish:** Green Enamel.



To carry a one-ton concentrated load, two No. MA-7 Wheels, as described above, are mounted in a heavy malleable yoke. These yokes are carefully machined for accurate fit of wheel axles and for proper bearing of wheel on rail flanges. Saddle of the yoke is drilled for seating of Timken Roller thrust bearings which carry the load bearing fittings. These bearings take care of thrust as well as the necessary swivel required for easy movement of such heavy loads. Load bearing fittings illustrated in drawing on page 147 are furnished at extra cost.

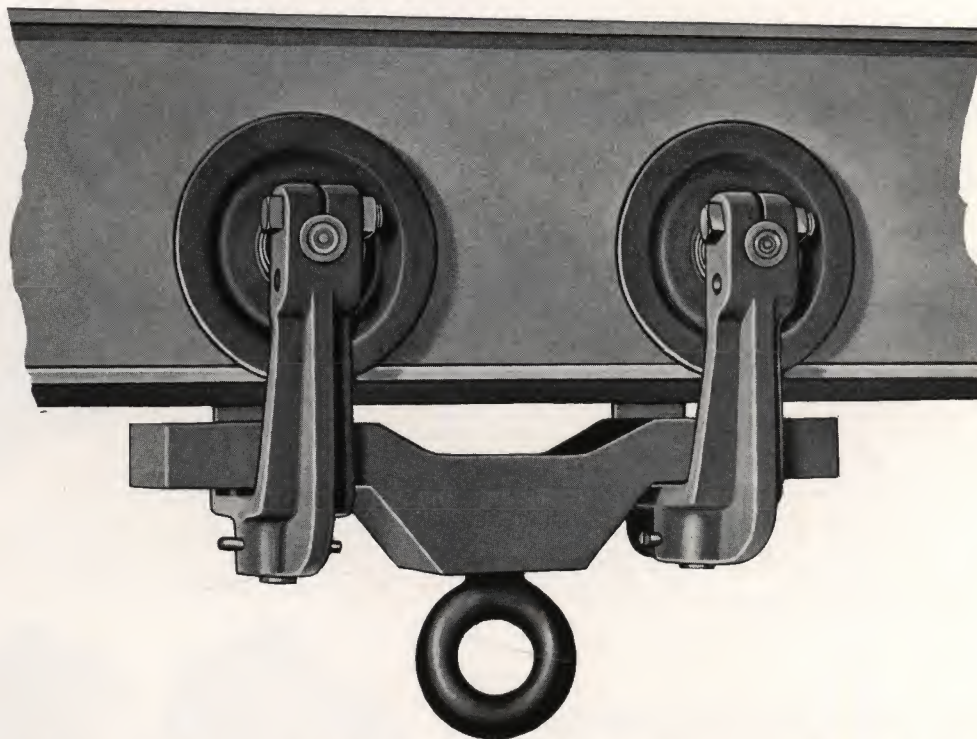
All No. MA-6 RailMaster Yokes are drilled for mounting of current collectors as illustrated on page 135 so that hand operated systems can be electrified without expensive changes.



\*SWIVEL NOT INCLUDED WITH TROLLEY

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





# No. MA-4 RailMaster Four-Wheel Trolley

2000 lb. Capacity

## SPECIFICATIONS

**Wheels:** No. MA-17—Drop Forged, Hardened Thread.

**Wheel Bearings:** Single row, New Departure precision ball.

**Lubrication:** Through axle with Zerk fitting.

**Yokes:** No. MA-16—Malleable Iron.

**Load Bar:** No. MA-23—Malleable Iron with Timken Roller Thrust Bearings.

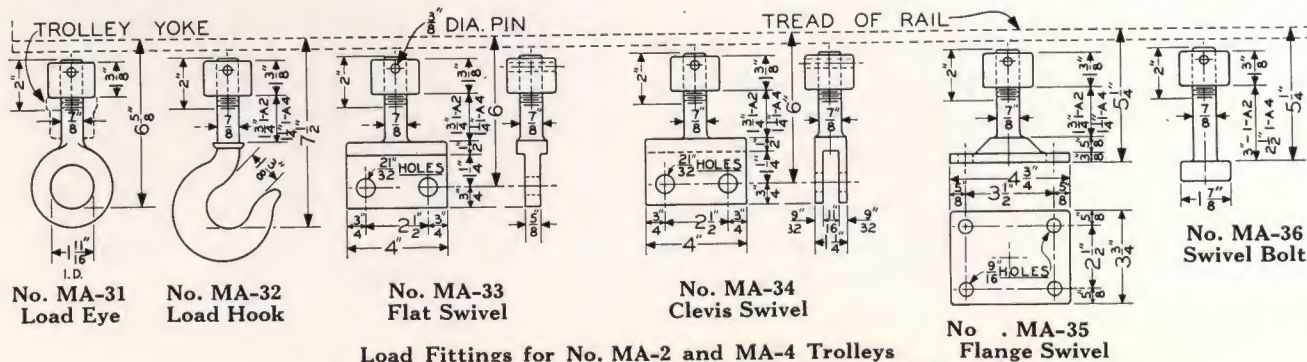
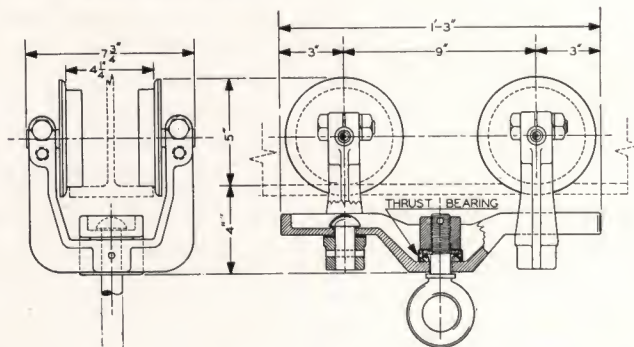
**Load Fitting:** Load Hook or Load Eye furnished with trolley.

**Weight:** 45 pounds.

**Finish:** Green Enamel.

Four-wheel Trolley No. MA-4 is made up of two No. MA-2 Trolleys coupled with Load Bar No. MA-23 which rides on the yokes and is held in place by a  $\frac{7}{8}$ " pin. The load eye, hook or other fitting rests on Timken Roller Thrust Bearings which provide adequate swivel for one-ton loads. Other fittings as shown in dimension drawing below are furnished special at extra cost.

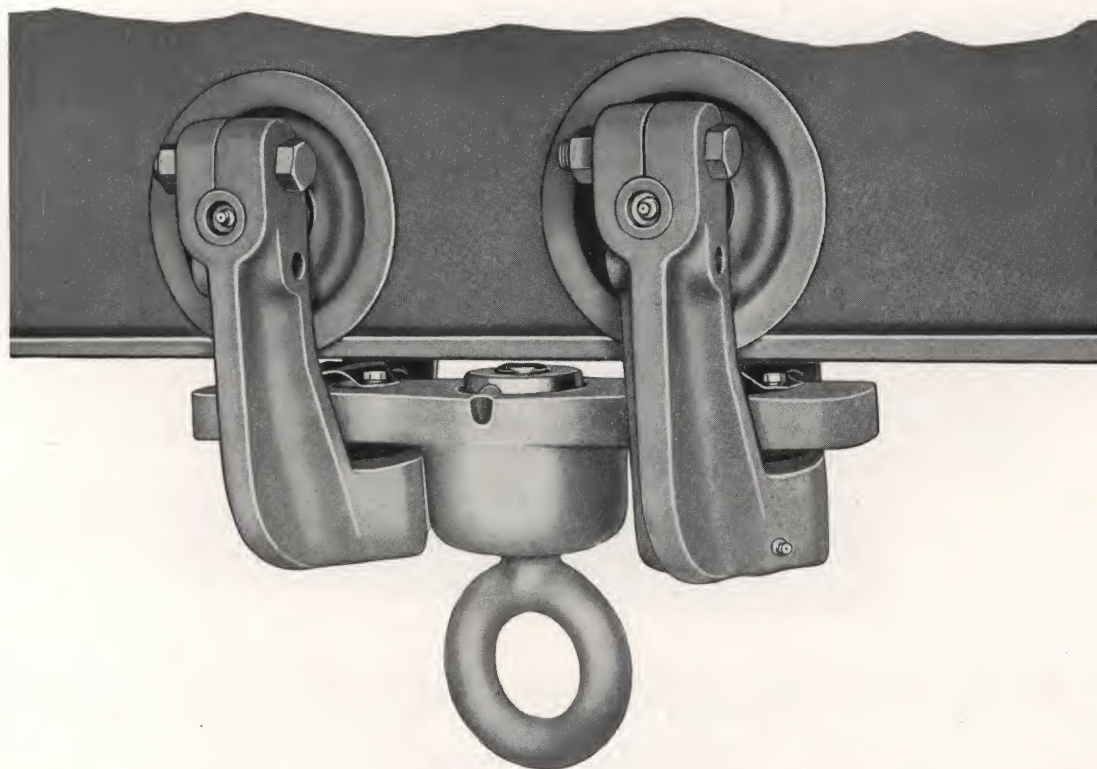
RailMaster Trolleys require little effort to overcome inertia and roll easily and smoothly through switches and around curves.



Load Fittings for No. MA-2 and MA-4 Trolleys

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





# No. MA-12N RailMaster 4-Wheel Trolley

5000 Pounds Capacity  
SPECIFICATIONS

**Wheels:** No. MA-7 Drop Forged Hardened Treads.

**Wheel Bearings:** Double row New Departure precision ball.

**Lubrication:** Through axle with Zerk fitting.

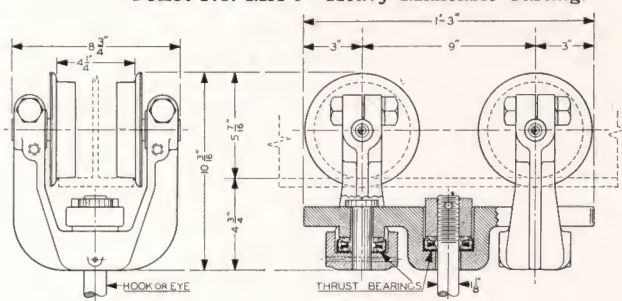
**Yoke:** No. MA-6—Heavy Malleable Casting.

**Load Bar:** No. MA-26—Special Alloy Steel with Timken Roller Thrust Bearing.

**Load Fitting:** No. MA-41 Eye or No. MA-42 Hook furnished with trolley.

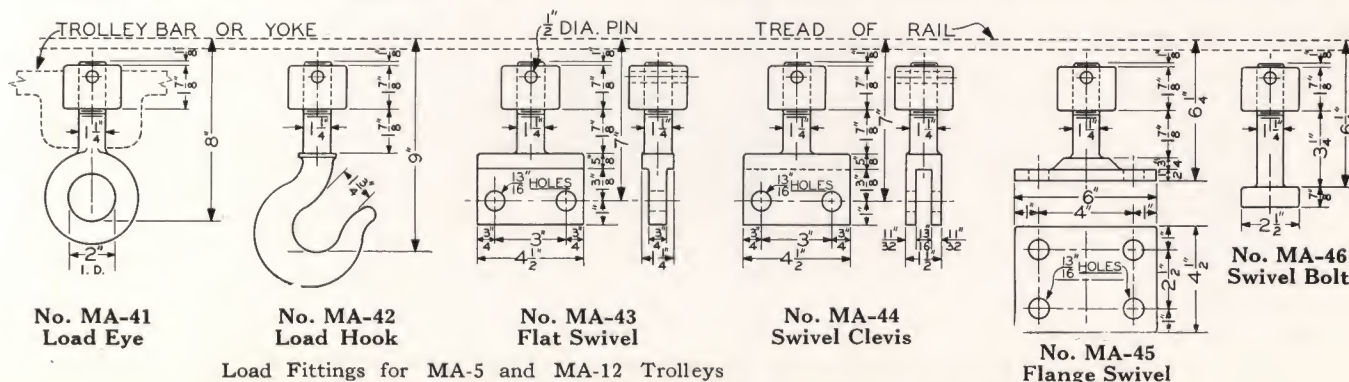
**Weight:** 80 pounds.

**Finish:** Green Enamel.



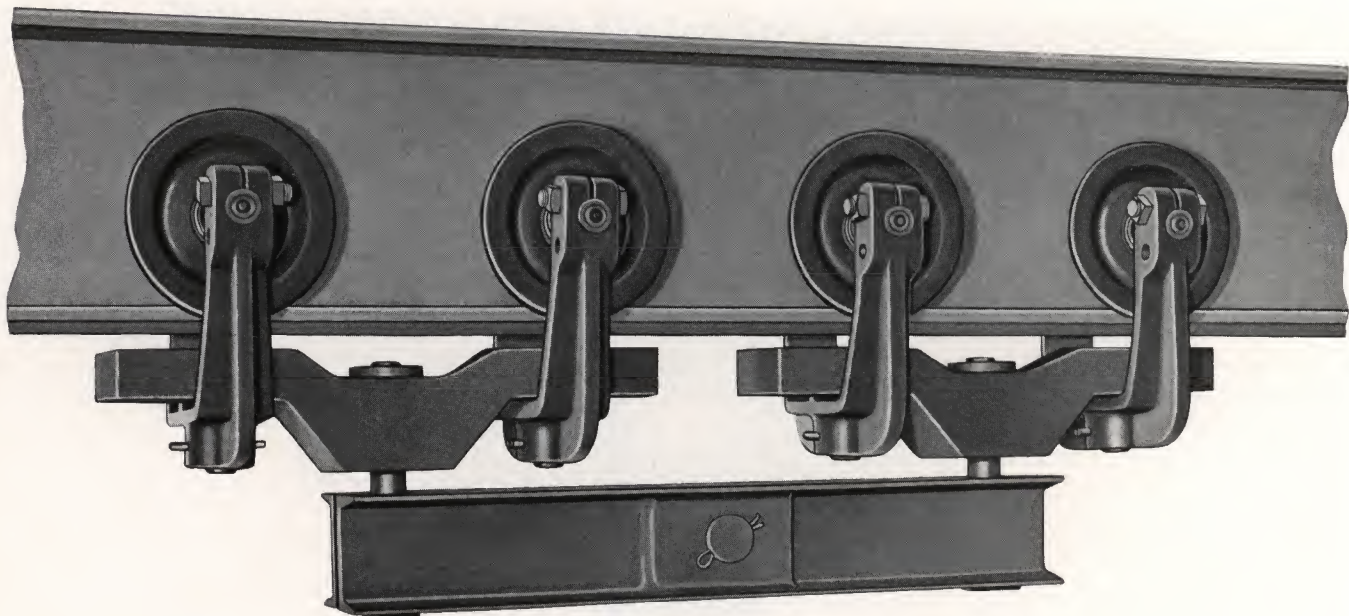
To provide for load thrust and swivel these heavy capacity four-wheel trolleys are equipped with Timken Roller bearings at the load bearing points on the yokes and load bar.

Price on MA-12 Trolley includes either Load Hook or Eye as desired. If other fittings shown below are required, specify number and refer to price list for additional cost.



Load Fittings for MA-5 and MA-12 Trolleys  
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





# No. MA-24 RailMaster 8-Wheel Trolley

4000 Pounds Capacity

## SPECIFICATIONS

**Wheel:** No. MA-17 Drop Forged, Hardened Treads.

**Wheel Bearings:** Single row, New Departure, precision ball.

**Lubrication:** Through axles with Zerk fitting.

**Yoke:** No. MA-16 Malleable Iron.

**Load Bar:** No. MA-23 Malleable Iron with Timken Roller thrust bearing.

**Long Load Bar:** Heavy Steel Channels, back to back.

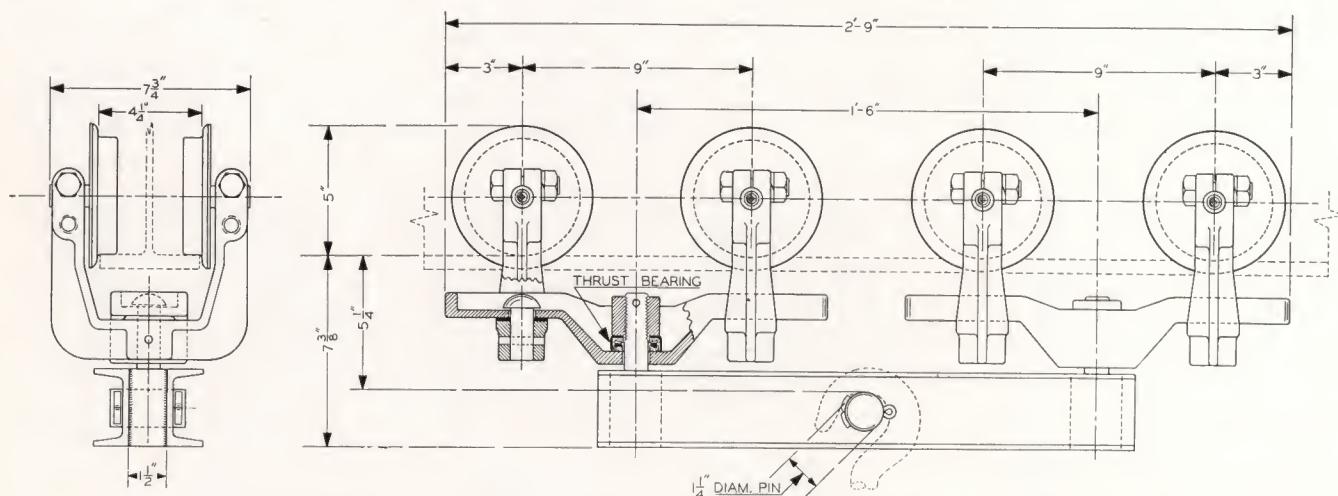
**Hook Bearing:** Nickel Steel Rod, 1 1/4" diameter.

**Weight:** 112 pounds.

**Finish:** Green Enamel.

RailMaster Trolley No. MA-24 carries a two-ton load with eight wheels on RailMaster track. Two No. MA-4 trolleys are joined with a fabricated load bar mounted with 7/8" nickel-steel swivel pins on Timken Roller thrust bearings in the MA-23 load bars. Load

hook bearing of 1 1/4" nickel steel is regularly furnished with this trolley for mounting of chain hoist. Special adaptation can be made for any two-ton electric hoist. Sketches and prices will be submitted on application.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





# No. MA-22N RailMaster 8-Wheel Trolley

10,000 Pounds Capacity

## SPECIFICATIONS

**Wheels:** No. MA-7 Drop Forged, Hardened Treads.

**Wheel Bearings:** Double row, New Departure, precision ball.

**Lubrication:** Through axles with Zerk fittings.

**Yokes:** No. MA-6 Malleable Casting.

**Load Bars:** No. MA-26 Alloy Steel with Timken Roller thrust bearing.

**Long Load Bar:** Heavy Steel Channels, back to back.

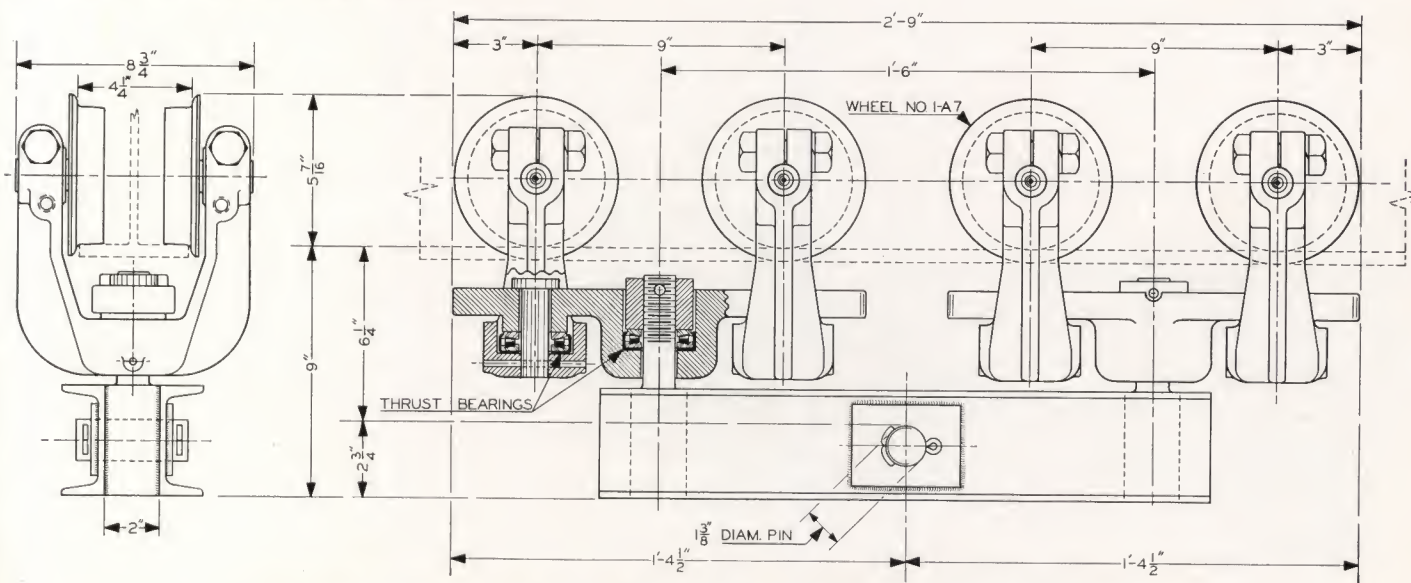
**Hook Bearing:** Nickel Steel Rod,  $1\frac{3}{8}$ " diameter.

**Weight:** 186 pounds.

**Finish:** Green Enamel.

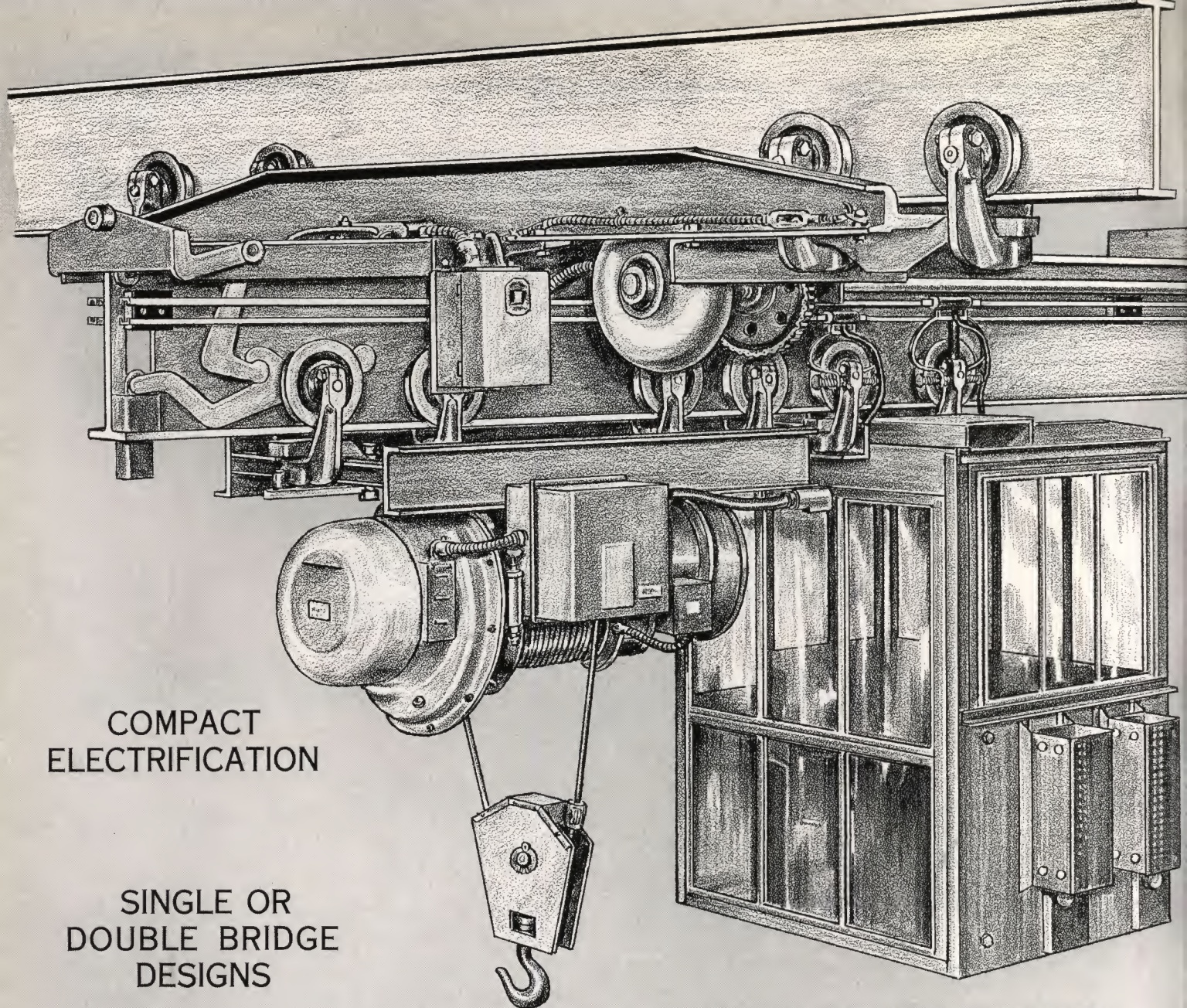
No. MA-22 Eight-wheel trolley consists of two No. MA-12 trolleys joined with a fabricated load bar suspended from  $1\frac{1}{8}$ " nickel-steel pins which swivel on the Timken Roller bearings in the short load bars. This assembly distributes the five ton load equally over eight wheels through roller thrust bearings at each of the six swiveling points.

Load bars are regularly furnished with a  $1\frac{3}{8}$ " nickel-steel hoist hook bearing, but can be adapted to meet the requirements of any electric hoist. Sketches and prices covering such adaptation will be furnished on request.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings

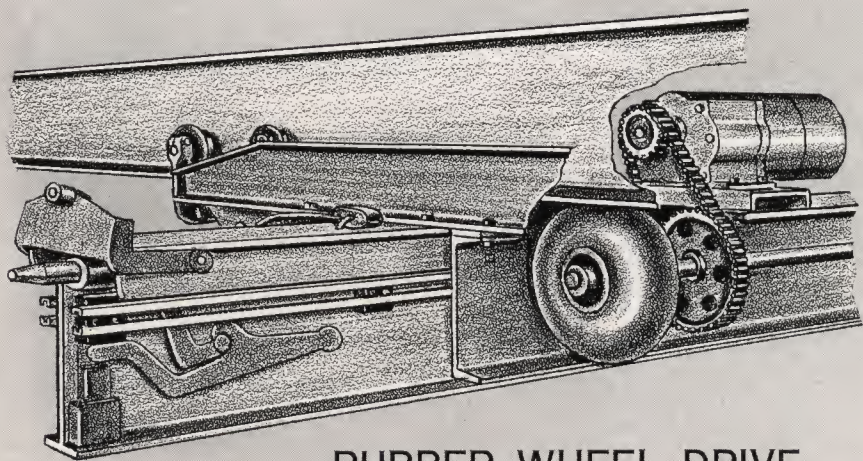




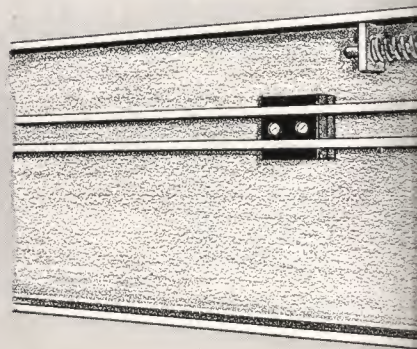
COMPACT  
ELECTRIFICATION

SINGLE OR  
DOUBLE BRIDGE  
DESIGNS

FLOOR OR CAB CONTROL



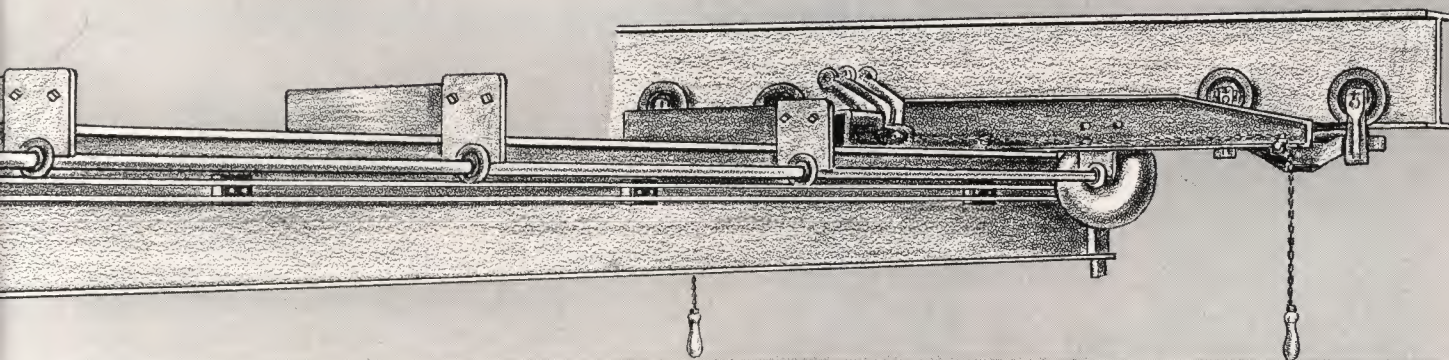
RUBBER WHEEL DRIVE





# RAILMASTER CRANES

MANUAL AND POWER OPERATED



## RailMaster Crane Advantages

### Heavy Duty Service

With RailMaster Track for runways and bridges, MonoRail Cranes of extremely simple design are developed for handling loads up to five tons on standard units. Large diameter forged wheels, heavy malleable cast yokes and load bars, together with welded end trucks are combined in many ways with single or twin bridge designs to make up travelling cranes bringing hook service over practically any area.

### Safety Interlocks

Simple, fool-proof interlock mechanism, either hand or electrically operated, latches crane bridges with other cranes or with cross-overs and spur tracks for passage of hoist or cab-carriers throughout any RailMaster Crane system.

### Double-Bridge Designs

By mounting two bridges on special trucks, cranes of increased capacity are designed for

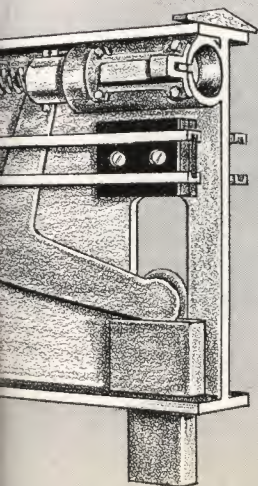
operation on multiple runways to cover unlimited areas. These cranes, closely resembling travelling railways, greatly reduce headroom requirements for five ton hoists and thereby permit lower ceiling heights in the building.

### Rubber Wheel Drive

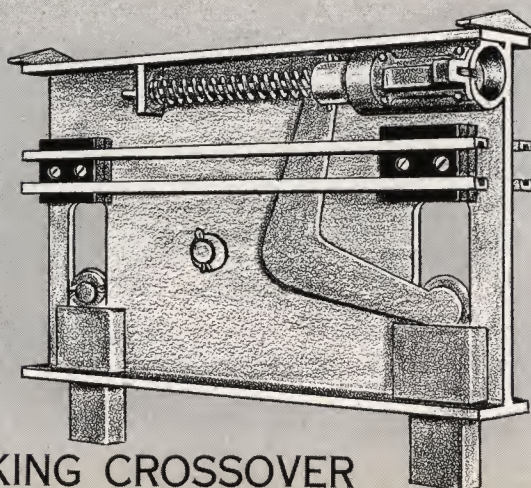
RailMaster Cranes, as well as cab-carriers, can be propelled by solid rubber wheels against the bottom of the runways. Wheels are driven by a squaring shaft with sprocket and chain to electric motor mounted on the crane bridge. With American MonoRail compact electrification, a wide variety of controls are available.

### Cab Operation

With the use of power operated equipment as described above, cab-carrier units of unlimited design can be applied. These units, containing all control apparatus, can be combined with hoists, grabs, buckets or magnets to meet the requirements of each particular handling job.



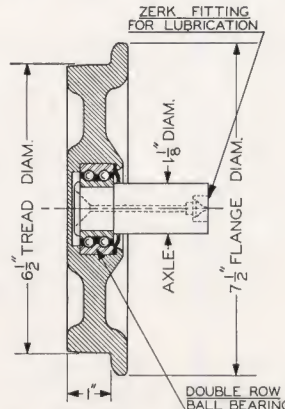
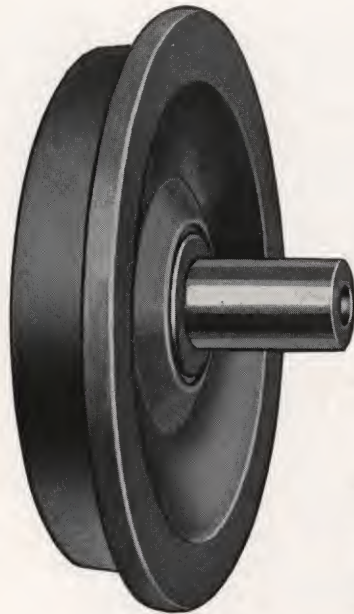
SAFETY  
INTERLOCKS



INTERLOCKING CROSSOVER



## RailMaster Cranes



**No. ME-20 Crane Wheel**  
Capacity, 2000 Pounds

Note: For rigid bus bar wiring of crane-ways use only No. MH-9 or MH-10 Electrification as shown at top of page 153. Crane wheels will not clear standard RailMaster Electrification.

### No. ME-108N RailMaster Crane Trolley

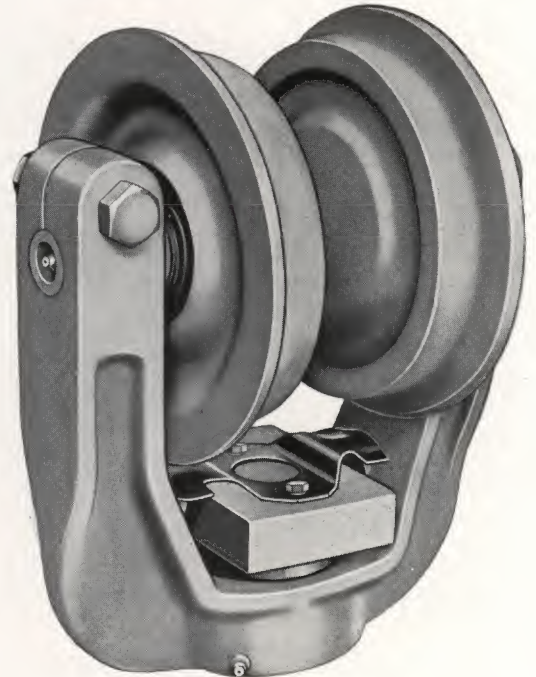
Extra heavy malleable yokes No. ME-42 are accurately machined to receive the axles of two RailMaster Crane Wheels as described above. Saddles of these yokes are carefully machined to receive a roller thrust bearing with spherical seat which acts as a self-aligning bearing. This prevents binding and thereby promotes free movement of bridge along runways.

### RailMaster Crane Truck

Trucks for the RailMaster Cranes listed in the following pages are fabricated from steel channels to meet the loading requirements of each crane. Note that end trucks in all cases ride on top of trolley yokes or load bars bringing the crane bridge up close to runways thereby saving considerable headroom.

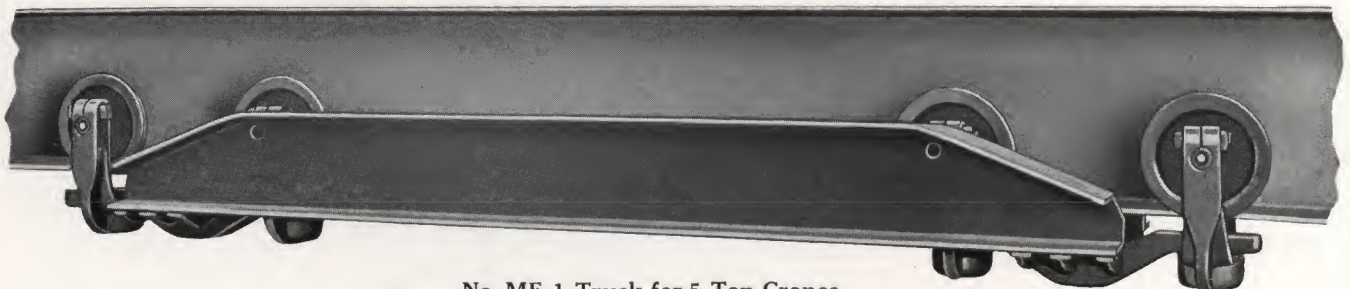
### No. ME-20 Crane Wheel

RailMaster Crane Wheels are drop forged with hardened treads  $6\frac{1}{2}$ " in diameter and 1" wide. These forged wheels are accurately machined to receive the double row New Departure precision ball bearings and the treads are formed for proper bearing on the crane-ways. Steel axles  $1\frac{1}{8}$ " in diameter have provision for pressure lubrication through the center.



**No. ME-108N Crane Trolley**  
Capacity, 3000 Pounds

All RailMaster cranes are equipped with these heavy capacity trolleys described on this page.



**No. ME-1 Truck for 5-Ton Cranes**

End trucks are built in various lengths and weights for the RailMaster cranes listed in the following pages.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# Electrification for RailMaster Craneways

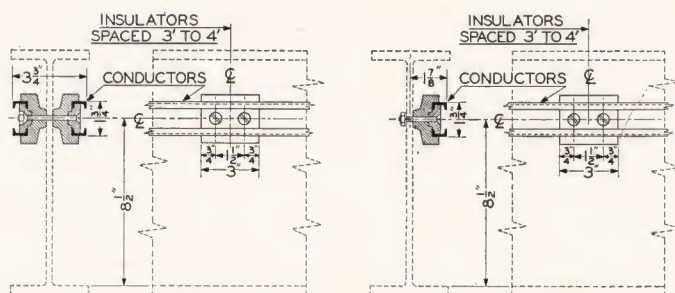
## No. MH-9 and MH-10 RIGID CONDUCTORS

The American MonoRail method of compact bus bar electrification as described in detail on page 65 assures greater safety in bringing current to crane bridges. It also offers simple control features for operation of MonoTractor crane drive as well as power driven carriers travelling on the bridge.

As illustrated in drawing to the right bus bars are mounted 1" higher on the web of the rail than with regular RailMaster track electrification. This is necessary because of the larger diameter of the crane wheels.

No. MH-9 covers a two conductor system for direct or grounded three phase current while with No. MH-10 four conductors are furnished for alternating current, the fourth bar often used for control purposes.

Current is picked up by standard shoe collectors mounted on the crane trolley yokes in similar manner to RailMaster trolley electrification.



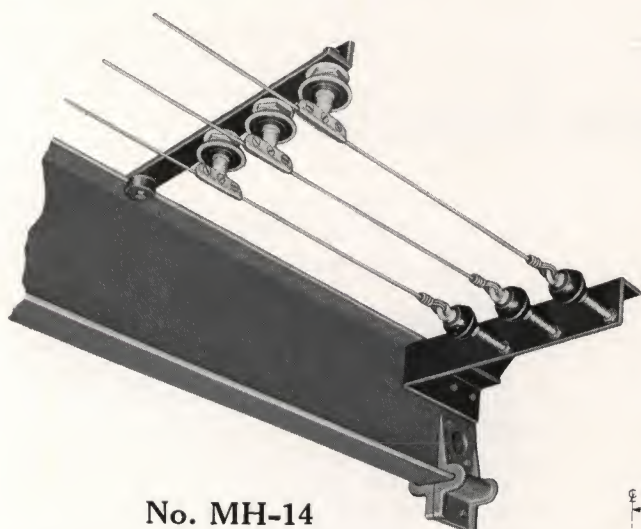
No. MH-10

No. MH-9

RailMaster Crane Runway Electrification

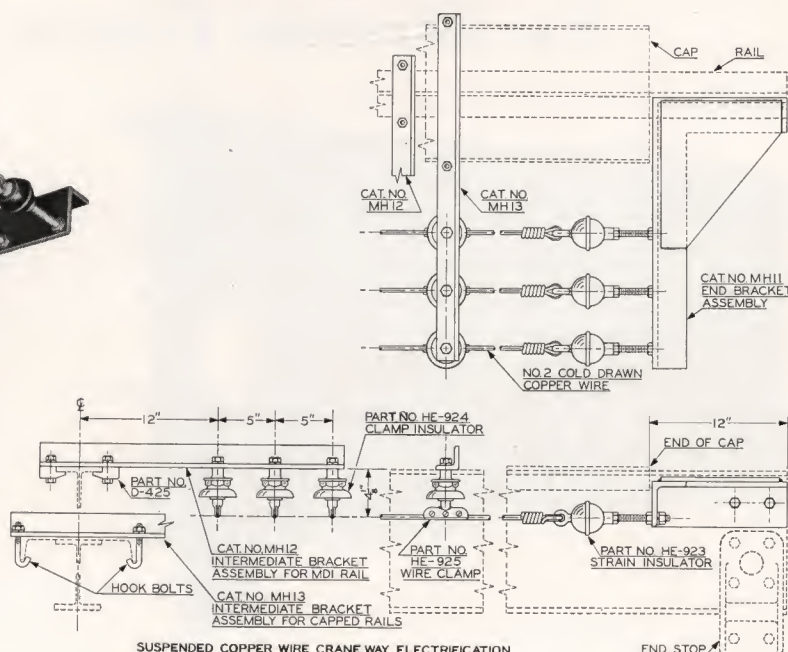
## No. MH-14 COPPER WIRE ELECTRIFICATION

As illustrated below, hard-drawn copper wires are also used for crane runway electrification. The same insulators and clamps described on page 103 are used in connection with the brackets shown in drawing below. These brackets, fabricated from steel angles, are applied to both standard and capped rail sections by means of clamps or bolts shown. Current is collected in the usual manner by grooved wheel trolleys carried on the RailMaster crane bridge on an insulated arm attached to one of the end trucks.



No. MH-14

Illustrating simple method of suspending copper wires from crane runway for electric service to crane bridge. Dimensional data covering various parts included in drawing to the right.



SUSPENDED COPPER WIRE CRANE WAY ELECTRIFICATION

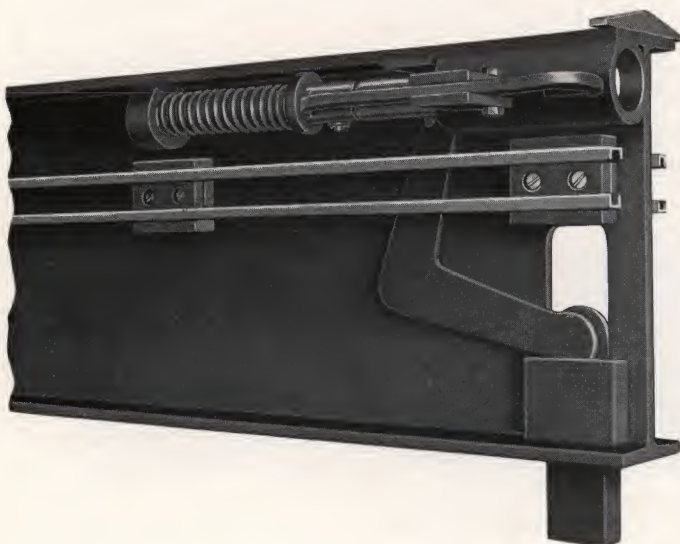
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# For RailMaster Crane Bridge Load Table

Refer To Page 135-B

## RailMaster Crane Interlocks



### No. ME-10 Connecting Interlock

This interlock, built into the connecting track or end of connecting crane bridge, aligns the rail as well as protects the open end. Operation is absolutely fool proof. The latch bolt in the bridge interlock is held by a cam lever. This lever must be raised by passage over the inclined plane on top of the connecting interlock before the bolt is released. When the latch bolt enters the connecting socket, it actuates safety stop cranks on both sides of the interlock, raising the stops for passage of trolleys. When stops reach the raised position the latch bolt is locked inside the connecting socket.

Unlatching action is completely protected since the latch bolt remains locked until the

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



safety stops reach the down position to guard the track ends. This exclusive feature assures complete safety regardless of trolley position.

## No. ME-9 Interlock Hand Operated

Accurate spotting of the crane is unnecessary since the bridge can be aligned by action of the latch bolt. Complete dimensions will be found in drawings on page 257 which also include suggestions for interlock supports.

## Motor Operated Interlocks

No. ME-84 for Single Bridge

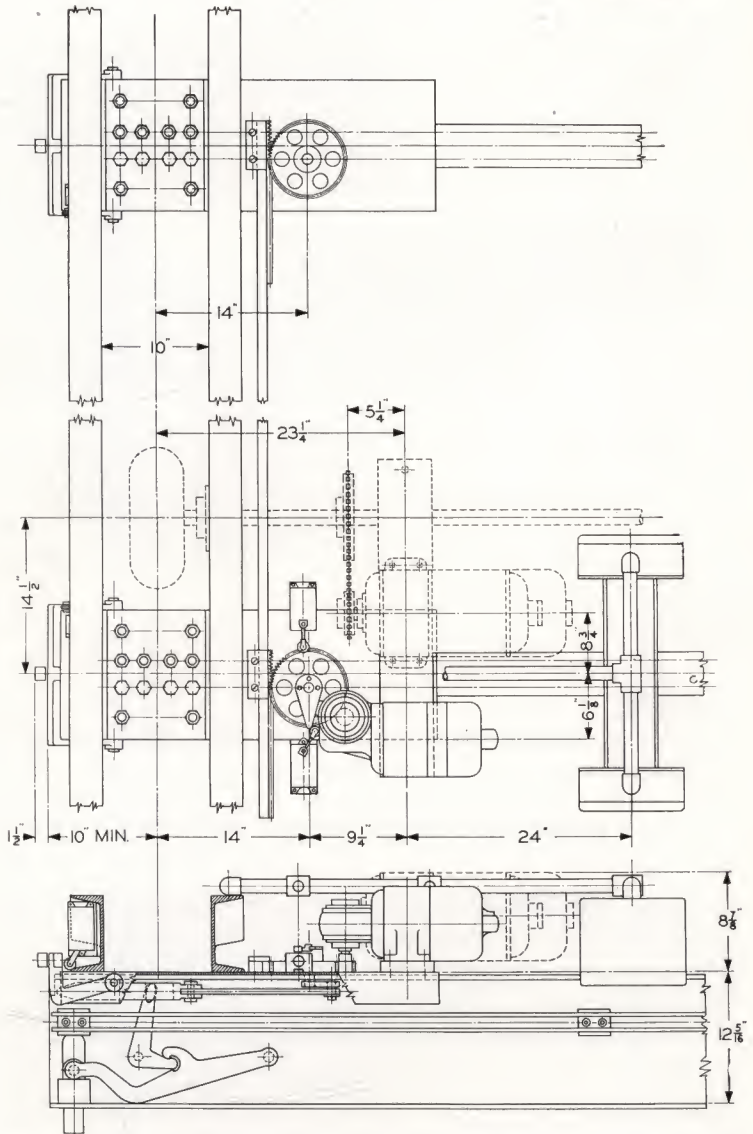
No. ME-85 for Double Bridge

To the right is shown detail of motor operated RailMaster Interlocks as designed for use on double bridge cranes. Latching and safety mechanisms are identical with the hand operated units described above requiring the use of No. ME-10 Connecting Interlock for connection to track or other crane bridge. Since extra conductors are sometimes required for control purposes, application of No. ME-84 Interlock to single bridge cranes should be referred to the American MonoRail Company.

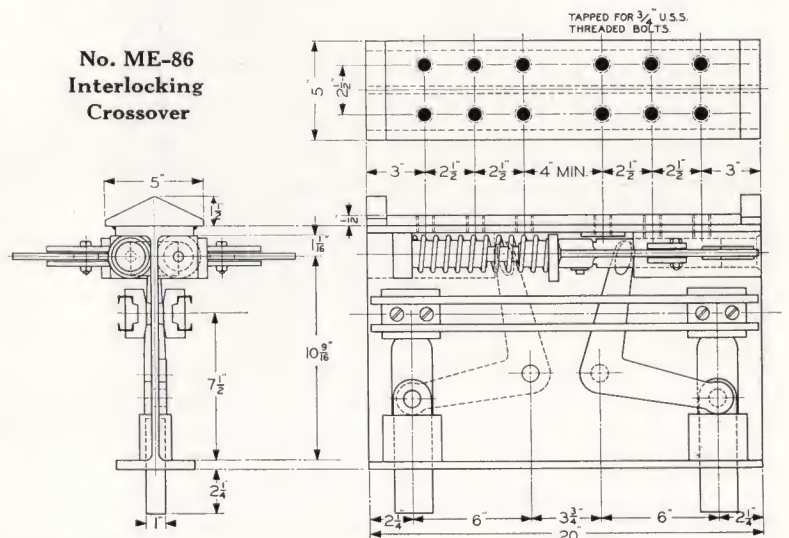
## No. ME-86 Interlocking Crossovers

Where building obstructions prevent direct latching of crane bridges, carriers can be transferred from one bridge to another over No. ME-86 Interlocking Crossovers as illustrated below. They consist of short sections of RailMaster Track with connecting interlocks mounted on each end. Minimum length—20 inches. Complete dimensions given below.

Drawings on page 257 show suggested methods for supporting crossover sections and offer special brackets designed for this purpose.



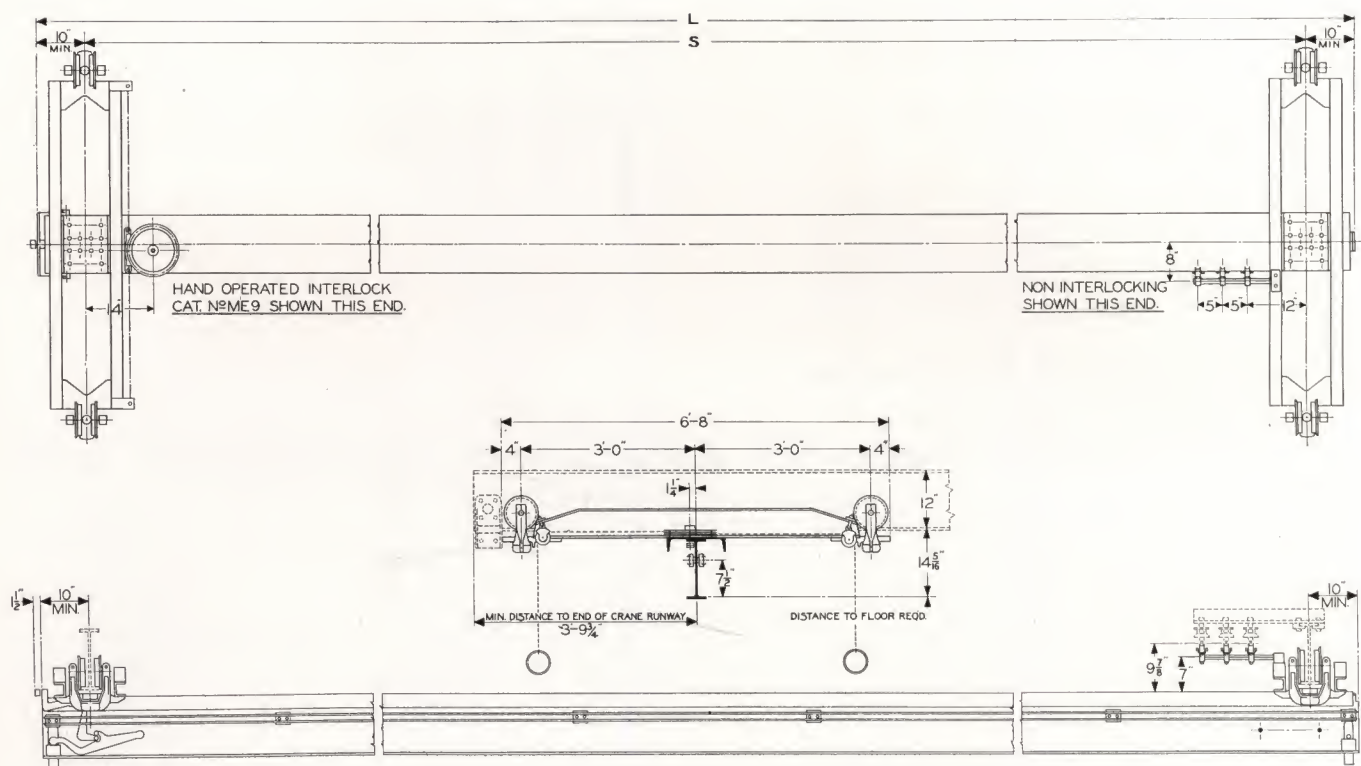
No. ME-85 Motor Operated Interlock for Double Bridge Cranes



No. ME-86  
Interlocking  
Crossover

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





### DIMENSIONS AND WEIGHTS FOR 3-TON RAILMASTER MANUAL CRANES

Overall Length	Bridge Section Number	Maximum Overhang	No. ME-62 Non-Electrified	No. ME-63 Electrified	No. ME-64 Non-Electrified	No. ME-65 Electrified
			Manually Operated		Hand Chain Drive*	
10'	MD-24	1.50'	1175	1240	1435	1475
12'	MD-24	1.75'	1265	1330	1555	1595
14'	MD-24	2.00'	1355	1420	1675	1705
16'	MD-24	2.25'	1445	1510	1785	1825
18'	MD-24	2.50'	1535	1600	1895	1935
20'	MD-24	2.75'	1625	1690	2015	2055
22'	MD-24	3.00'	1715	1780	2135	2175
24'	MD-24	3.25'	1805	1870	2245	2285
26'	MD-24	3.50'	1895	1960	2365	2405
28'	MD-27	4.50'	2485	2555	2985	3025
30'	MD-27	5.00'	2615	2680	3135	3175
32'	MD-27	5.50'	2745	2810	3285	3325
THREE TRUCK CRANES						
36'	MD-24	6.00'			3440	3505
40'	MD-24	6.00'			3670	3735
44'	MD-24	6.00'			3900	3965
48'	MD-24	6.00'			4130	4195
52'	MD-24	6.00'			4370	4435
56'	MD-25	6.00'			5610	5675
60'	MD-25	6.00'			5910	5975

Note: Standard overhang for all cranes—10 inches. See page 154 for details of various Bridge sections.

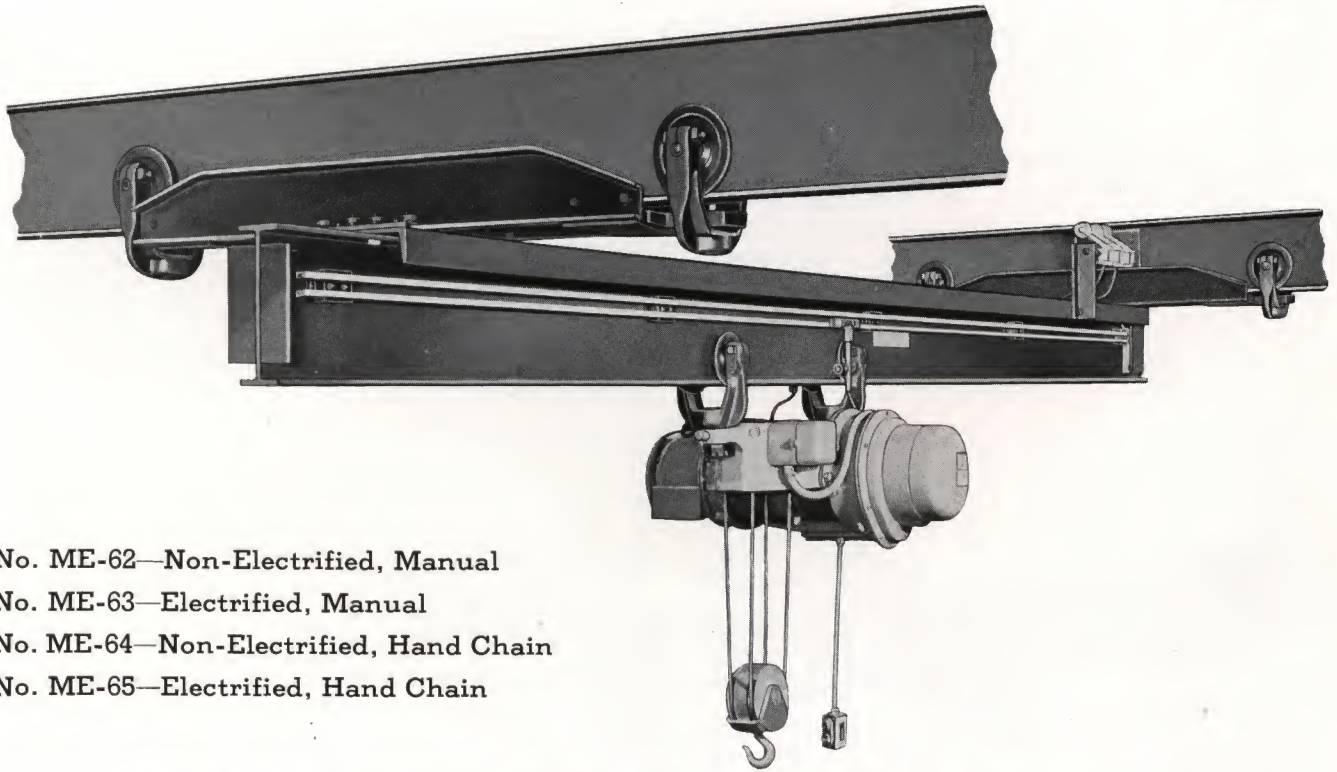
Maximum overhangs listed above are based on the use of standard length RailMaster trolleys supporting rated capacity loads.

Crane capacity is for total load exclusive of trolleys and hoist.

\*See page 158 for details of Hand Chain Drive.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





- No. ME-62—Non-Electrified, Manual
- No. ME-63—Electrified, Manual
- No. ME-64—Non-Electrified, Hand Chain
- No. ME-65—Electrified, Hand Chain

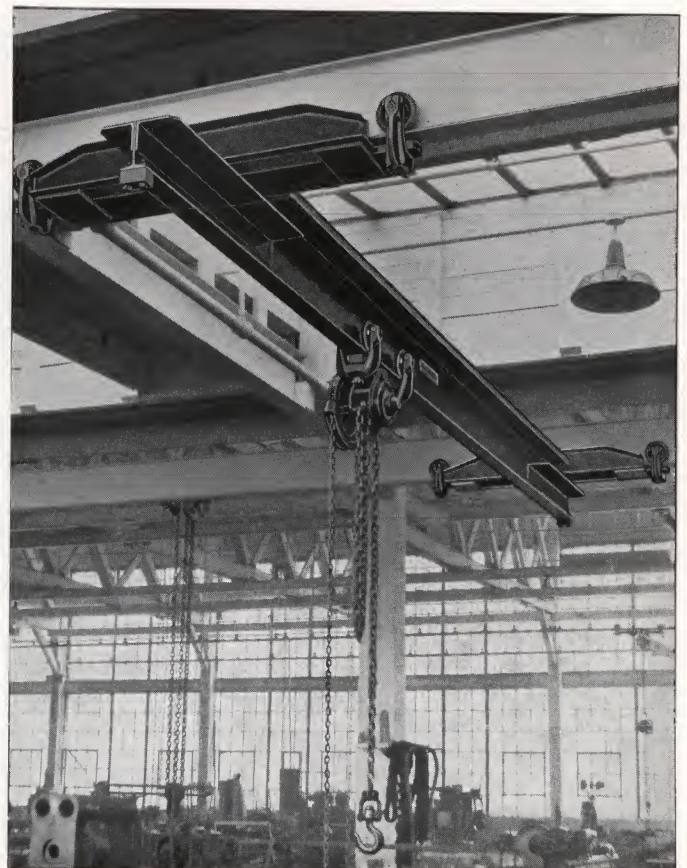
## RailMaster 3-Ton Manual Cranes

### SPECIFICATIONS

- Crane Bridge:** See opposite page—also load table on page 154.
- End Trucks:** Heavy Steel Channel.
- Wheels:** No. ME-20 Drop Forged, Hardened Tread.
- Wheel Bearings:** Double Row, New Departure, precision ball.
- Trolley Yokes:** No. ME-42 Malleable Iron.
- Bridge Electrification:** No. MH-30, Four Conductors.
- Craneway Wiring:** Three Conductors, No. 2 Copper Wire.
- Interlock:** No. ME-9 Hand Operated.
- Hand Chain Drive:** No. ME-94 (Detail shown on page 158).
- Weights and Dimensions:** See table and sketch on opposite page.
- Finish:** Green Enamel.

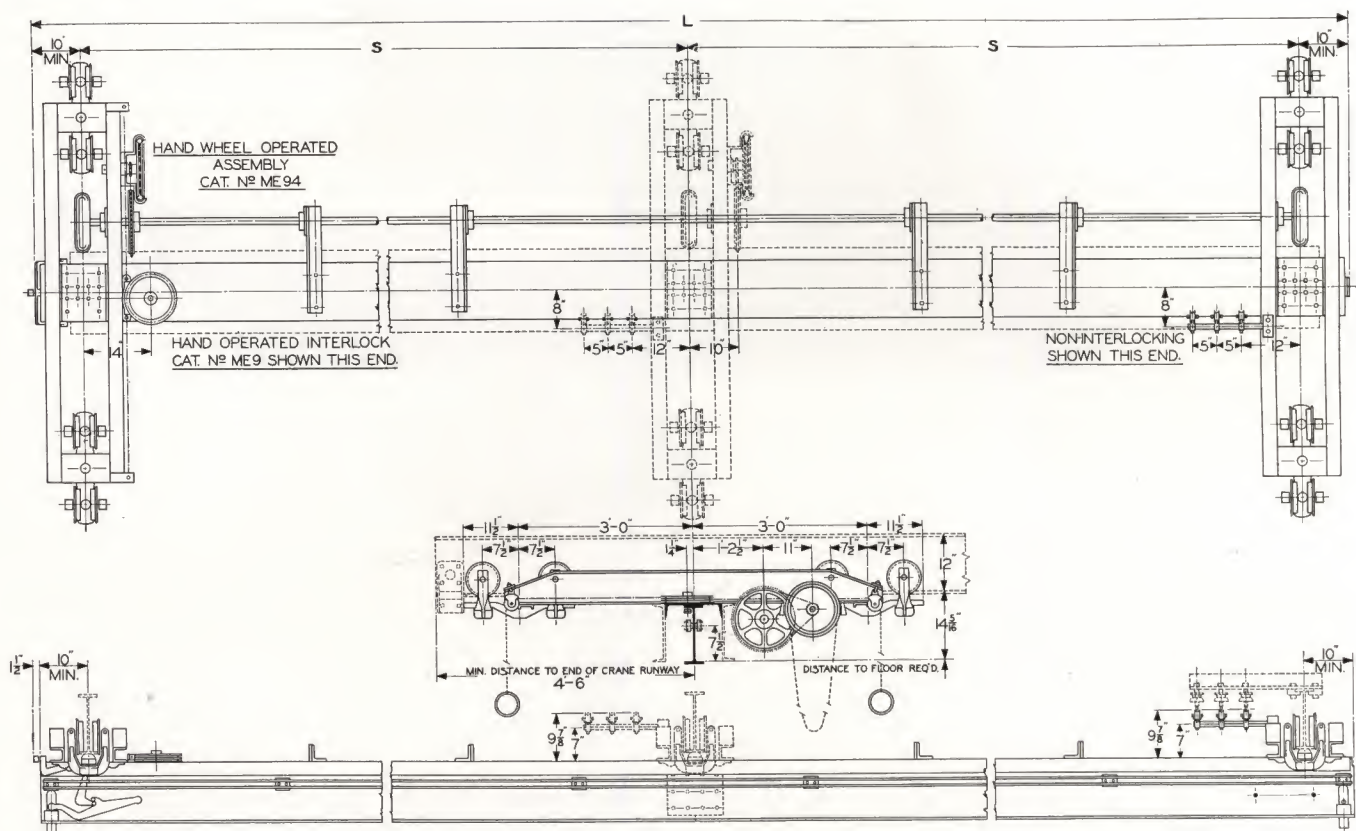
The advantages of long spans with economical hanger spacing apply as effectively to RailMaster crane runways as to single track systems. Various rail sections illustrated with load table on page 130 are available for such use.

Specifications above indicate the ruggedness built into RailMaster cranes as well as their adaptability not only to electrification but to rubber wheel drive by means of hand chain operation. This last feature provides easy and accurate crane handling under high ceiling conditions or for extra long span bridges.



No. ME-62 Crane with special provision for overhang and low headroom.





## DIMENSIONS AND WEIGHTS FOR FIVE-TON RAILMASTER HAND CHAIN CRANES

Overall Length	Bridge Section	Maximum Overhang	No. ME-74 Non-Electrified	No. ME-75 Electrified
			Hand Chain Drive	
10'	MD-24	1.75'	1735	1770
12'	MD-24	1.75'	1855	1890
14'	MD-24	2.00'	1965	2000
16'	MD-25	2.25'	2375	2410
18'	MD-25	2.50'	2525	2560
20'	MD-27	2.75'	2935	2970
22'	MD-27	3.00'	3115	3150
24'	MD-28	3.25'	3555	3590
26'	MD-28	3.75'	3755	3790
28'	MD-28	4.00'	3955	3990
30'	MD-28	4.25'	4155	4190
32'	MD-28	4.50'	4355	4390
THREE TRUCK CRANES				
36'	MD-25	5.25'	4540	4605
40'	MD-25	5.50'	4840	4905
44'	MD-27	6.00'	5720	5785
48'	MD-27	6.00'	6070	6135
52'	MD-28	6.00'	7000	7065
56'	MD-28	6.00'	7400	7465
60'	MD-28	6.00'	7800	7865

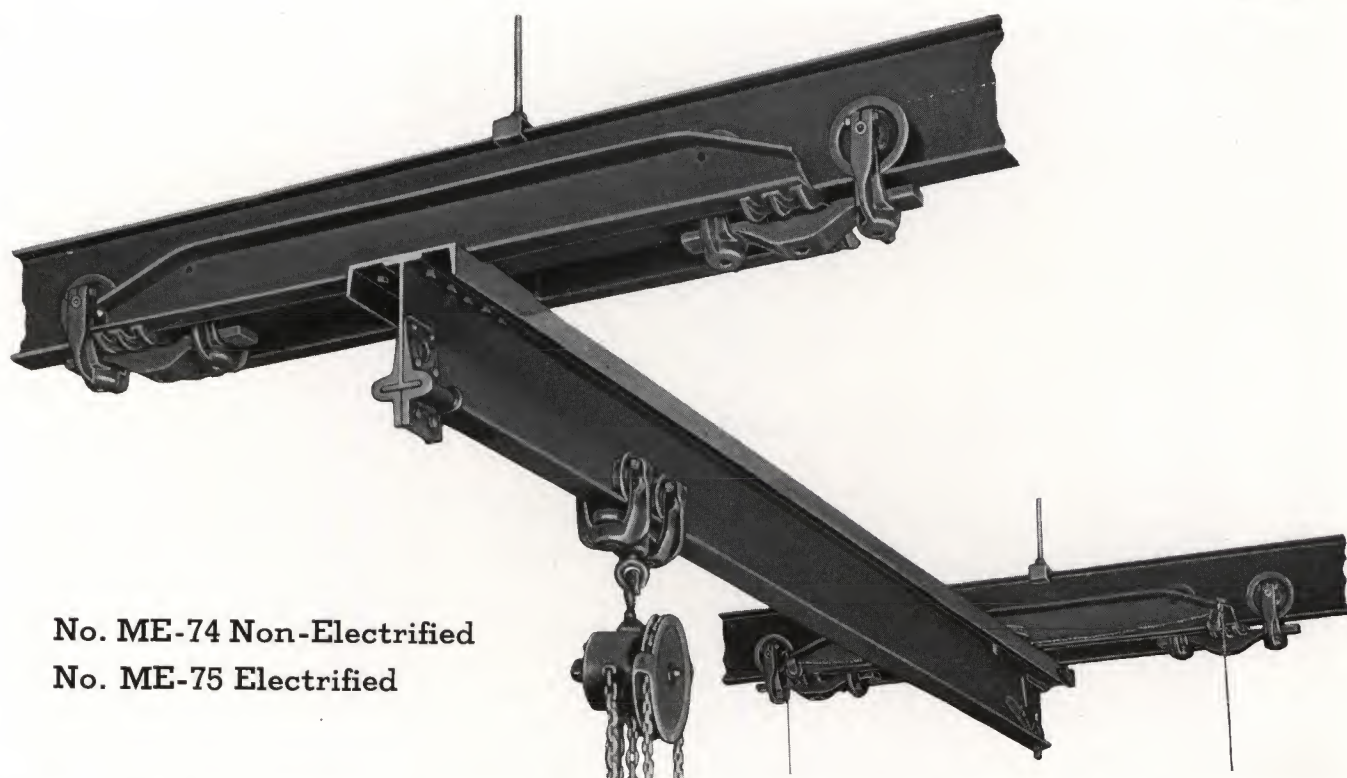
Note: Standard overhang for all cranes—10 inches. See Page 154 for details of various Bridge Sections.

Maximum overhangs listed above are based on the use of standard length RailMaster trolleys supporting rated capacity loads.

Crane capacity is for total load exclusive of trolleys and hoist.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





No. ME-74 Non-Electrified  
No. ME-75 Electrified

# RailMaster Five-Ton Hand Chain Cranes

## SPECIFICATIONS

**Crane Bridge:** See opposite page—also load table on page 154.

**End Trucks:** No. ME-1 Eight Wheels.

**Wheels:** No. ME-20 Drop Forged, Hardened Tread.

**Wheel Bearings:** Double Row, New Departure, precision ball.

**Trolley Yokes:** No. ME-42 Malleable Iron.

**Bridge Electrification:** No. MH-30, Four Conductors.

**Craneway Wiring:** Three Conductors, No. 2 Copper Wire.

**Interlock:** No. ME-9 Hand Operated.

**Hand Chain Drive:** No. ME-94 (Detail shown on opposite page).

**Weights and Dimensions:** See table and sketch on opposite page.

**Finish:** Green Enamel.

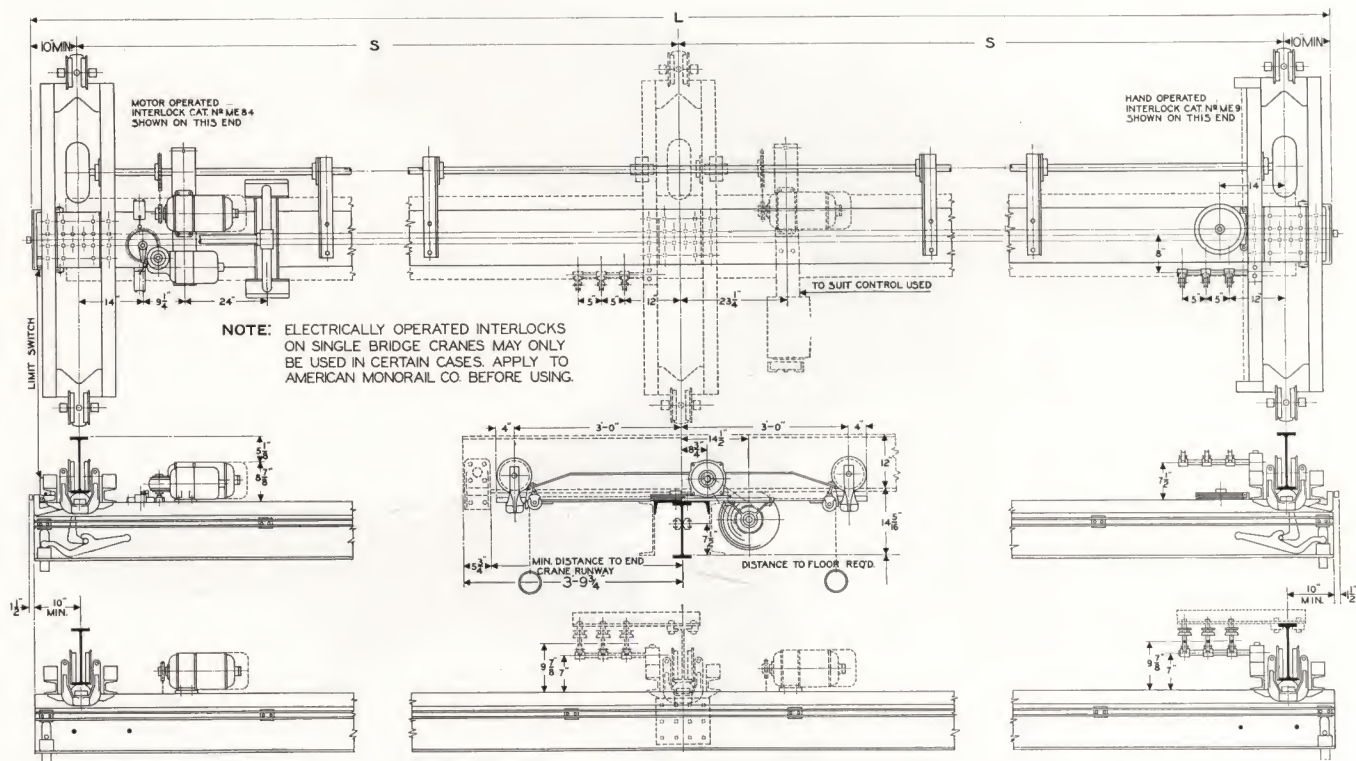
By welding 12" channels to each side of the bridge cap, as shown by dotted lines in sketch on opposite page, ample strength and stiffness thereby increases the capacity of RailMaster cranes up to 5 tons on a single bridge. Span variations are provided for by application of beam sections with varying channels used for cap or box members. See load table on page 154.

Drawing on opposite page gives details of rubber wheel, hand chain, drive unit together with dimensions covering uniform headroom requirements for all capacities.



RailMaster 5-ton crane performs variety of handling operations over entire floor area.





## DIMENSIONS AND WEIGHTS FOR 3-TON RAILMASTER MONOTRACTOR CRANES

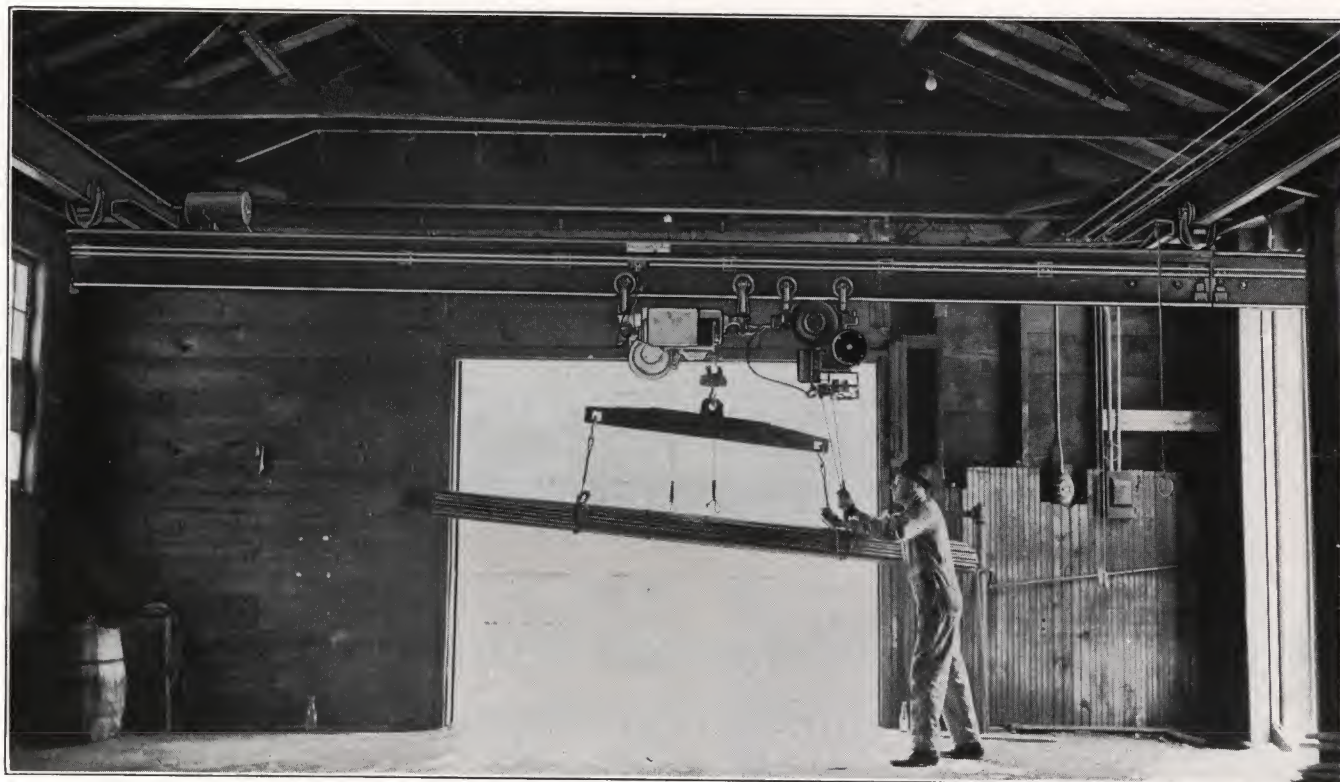
Overall Length	Maximum Overhang	Bridge Section Number	No. ME-66 Motor Drive Electrified Bridge
10'	1.50'	MD-24	1700
12'	1.75'	MD-24	1820
14'	2.00'	MD-24	1930
16'	2.25'	MD-24	2050
18'	2.50'	MD-24	2160
20'	2.75'	MD-24	2280
22'	3.00'	MD-24	2400
24'	3.25'	MD-24	2510
26'	3.50'	MD-24	2630
28'	4.50'	MD-27	3250
30'	5.00'	MD-27	3400
32'	5.50'	MD-27	3550
<b>THREE TRUCK CRANES</b>			
36'	6.00'	MD-24	3715
40'	6.00'	MD-24	3965
44'	6.00'	MD-24	4195
48'	6.00'	MD-24	4425
52'	6.00'	MD-24	4665
56'	6.00'	MD-25	5905
60'	6.00'	MD-25	6205

Note: Standard overhang for all cranes—10 inches. See page 154 for details of various Bridge Sections.

Maximum overhangs listed above are based on the use of standard length RailMaster trolleys supporting rated capacity loads. Crane capacity is for total load exclusive of trolleys and hoist.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished on working drawings.





## No. ME-66 RailMaster 3-Ton Cranes MonoTractor Drive

### SPECIFICATIONS

**Material specifications** similar to those listed on page 157 covering Hand Operated 3-Ton Cranes.

**Rubber Tire:** No. V-2300-12"x3", Solid rubber.

**Drive Shaft Bearing:** New Departure Precision Ball.

**Motor Unit:** Full ball bearing, planetary gear head type. Gears run in oil bath. Motor is crane type, neat and compact. Can be furnished with multiple disc integrally built brakes operating directly off motor shaft.

**Control:** See pages 187-188.

#### Interlocks:

Hand Operated: No. ME-9—Detail on page 257.

Motor Operated: No. ME-84—Used only in certain cases—apply for information before using.

High draw bar pull obtained from relatively low horsepower motors accounts for the remarkable economy found in the operation of MonoTractor cranes. Rubber drive wheels function by contact against the bottom of runways, traction being entirely independent of load.

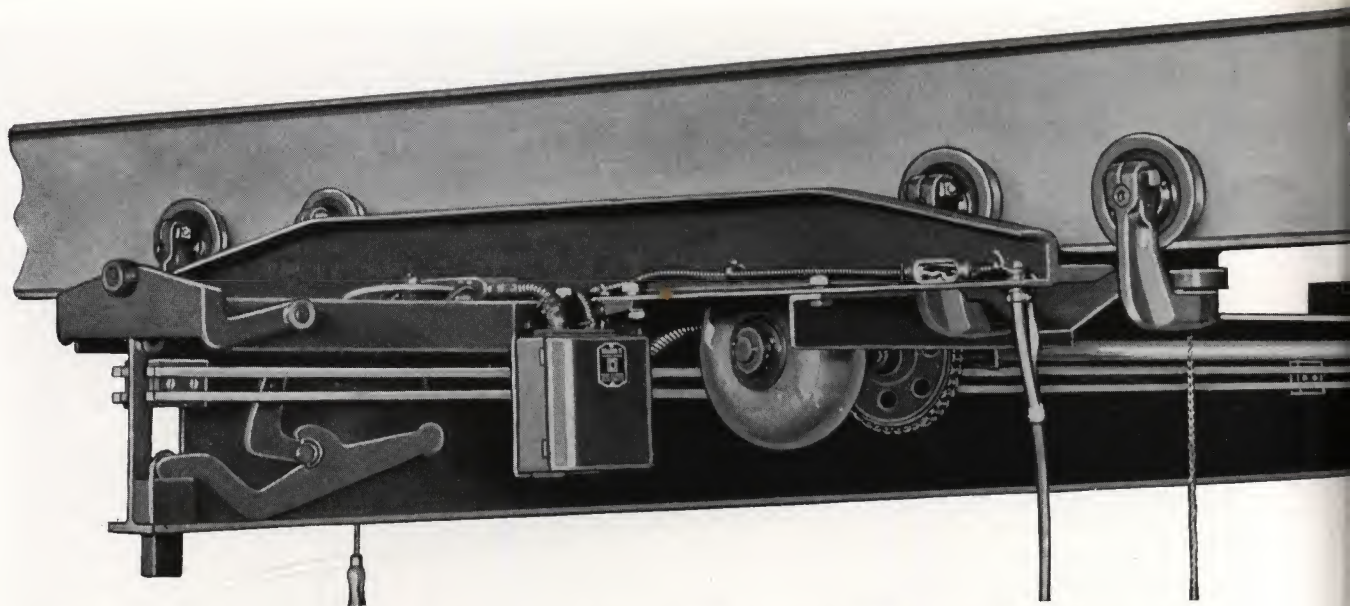
With the American MonoRail system of compact bus bar electrification control of horizontal and vertical movement from floor or cab is limited only by the nature of operations to be performed.

Variable speeds, within reasonable range, furnished for movement of bridge or carrier.



Rubber drive wheels under each runway impel instantaneous movement of multiple truck cranes.





## No. ME-76 RailMaster Five-Ton Crane MonoTractor Drive

### SPECIFICATIONS

Material specifications similar to those listed on page 159 covering Hand Chain Operated 5-Ton Cranes.

**Rubber Tire:** No. V-2300—12" x 3" solid rubber.

**Drive Shaft Bearing:** New Departure Precision Ball.

**Motor Unit:** Full ball bearing, planetary gear head type. Gears run in oil bath. Motor is crane type, neat and compact. Can be furnish-

ed with multiple disc integrally built brakes operating directly off motor shaft.

**Control:** See pages 187-188.

**Interlock:**

Hand Operated: No. ME-9—Detail on page 257.

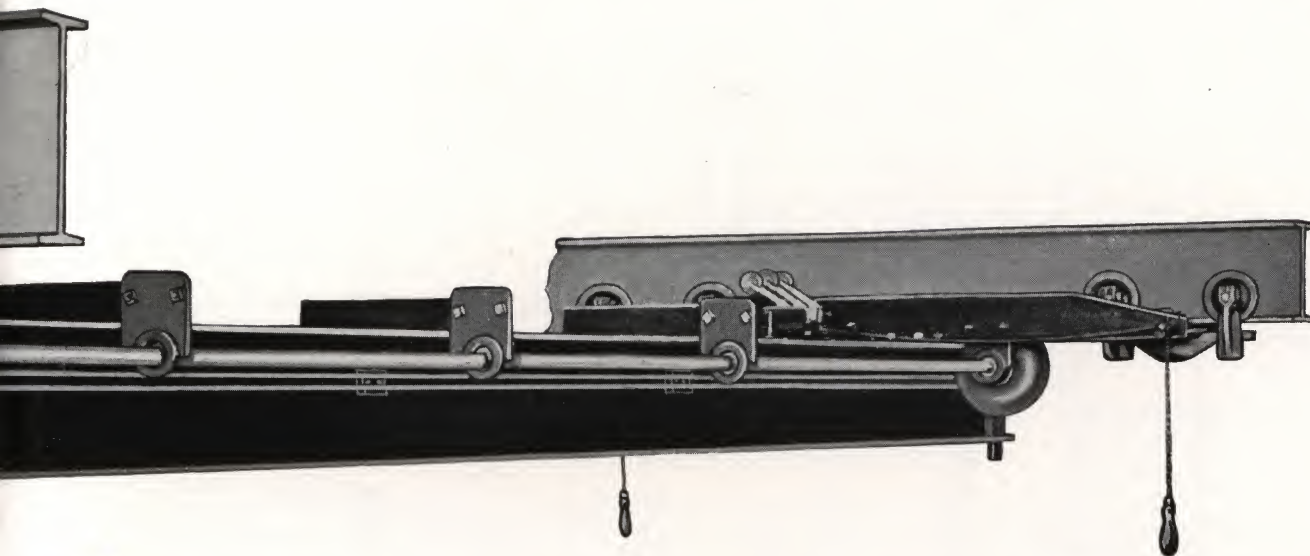
Chain Operated: No. ME-84—Used only in certain cases—apply for information before using.

### DIMENSIONS AND WEIGHTS FOR 5-TON RAILMASTER MONOTRACTOR CRANES

Overall Length	Maximum Overhang	Bridge Section Number	No. ME-76 Motor Drive Electrified Bridge
10'	1.75'	MD-24	2010
12'	1.75'	MD-24	2130
14'	2.00'	MD-24	2240
16'	2.25'	MD-25	2650
18'	2.50'	MD-25	2800
20'	2.75'	MD-27	3210
22'	3.00'	MD-27	3390
24'	3.25'	MD-28	3830
26'	3.75'	MD-28	4030
28'	4.00'	MD-28	4230
30'	4.25'	MD-28	4430
32'	4.50'	MD-28	4630
THREE TRUCK CRANES			
36'	5.25'	MD-25	4740
40'	5.50'	MD-25	5140
44'	6.00'	MD-27	6020
48'	6.00'	MD-27	6370
52'	6.00'	MD-28	7300
56'	6.00'	MD-28	7700
60'	6.00'	MD-28	8100

Note: Standard overhang for all cranes—10 inches. See page 154 for details of various Bridge Sections.  
Maximum overhangs listed above are based on the use of standard length RailMaster trolleys supporting rated capacity loads.  
Crane capacity is for total load exclusive of trolleys and hoist.



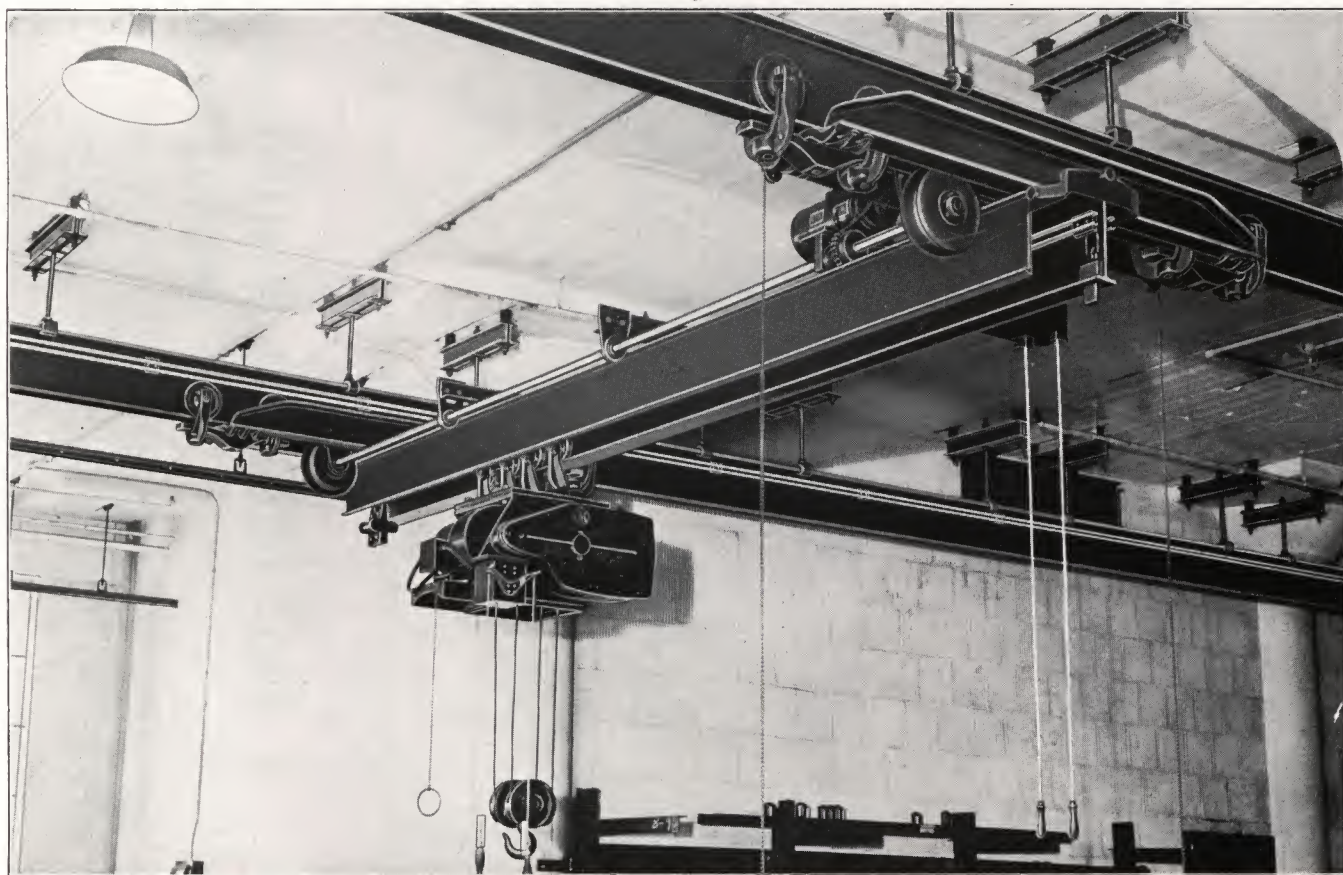


Flexible suspension of runways together with the equally flexible method of mounting crane trucks on the large diameter wheels assures the easy running, non-binding features of these heavy power driven RailMaster cranes.

Since structural design is greatly simplified, the dead weight of the crane itself is kept remarkably low, but at the same time maintains an ample margin of safety for load capacity.

All the features of MonoTractor drive as outlined in connection with the 2½-ton cranes and described in greater detail on page 151 offer equal advantage to these higher capacity units.

Complete dimensional data will be found in drawing on page 164 which also includes precautionary note covering use of motor operated interlock. Special provision must be made to accommodate certain types of control requiring special study in all such cases.



Box bridge construction of RailMaster 5-ton Cranes allows heavy loads to travel longer spans.





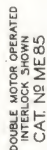
# No. ME-76 RailMaster Five-Ton Crane MonoTractor Drive

Table of weights and dimensions as well as specifications covering RailMaster five-ton MonoTractor cranes will be found on page 162. Attention is called to the use of 12" channels welded to each flange of the capped section of bridge as shown by

dotted lines in drawing above. The purpose of this added strength is to stiffen the beam so as to carry its capacity load over the long spans listed in the table. See page 154 for load table covering all RailMaster crane bridge sections.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





### 3-TON CAPACITY

- No. ME-67—Hand Chain Operated—Non-Electrified.  
No. ME-68—Hand Chain Operated—Electrified.  
No. ME-69—MonoTractor Drive.

## 5-TON CAPACITY

- No. ME-77—Hand Chain Operated—Non-Electrified.  
No. ME-78—Hand Chain Operated—Electrified.  
No. ME-79—MonoTractor Drive.

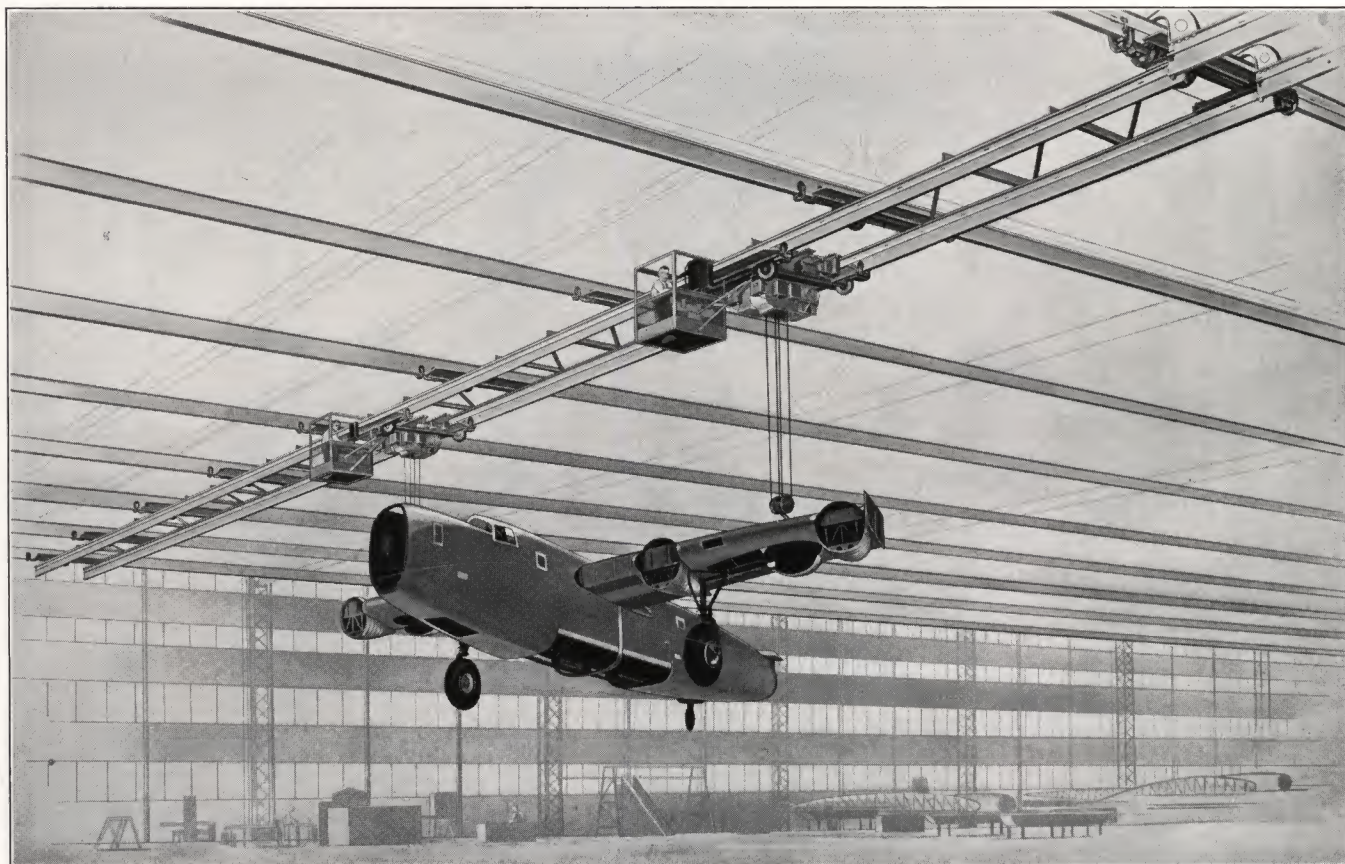
## SPECIFICATIONS

Crane Bridges: See table on page 166—also load table on page 154.  
Wheels: No. ME-20 Drop Forged, Hardened Treads.  
Wheel Bearings: Double Row, New Departure, precision ball.  
Trolley Yokes: No. ME-42 Malleable Iron.  
Bridge Electrification: No. MH-30—up to 8 conductors  
Control: See pages 187 and 188.  
CraneWAY Wiring: Conductor, No. 2 Copper Wire.  
Interlocks:  
Hand Operated: No. ME-9—Detail on page 257.

**Motor Operated:** No. ME-84—Used only in certain cases—apply for information before using.  
**Auxiliary Contacts:** No. ME-83 Furnished for control of two interlocked cranes as a single unit. Also for control of No. ME-84 Interlock Motor from connecting track.  
**Chain Drive:** No. ME-94—See Detail on page 158.  
**Motor Unit:** Specifications listed on pages 161 and 162.  
**Weights and Dimensions:** See table on page 166.  
**Finish:** Green Enamel.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





Installed in an aircraft assembly plant, this 160 foot double bridge crane is propelled by rubber wheels under each of the nine runways, through squaring shaft geared to a single motor unit.

### DIMENSIONS AND WEIGHTS FOR RAILMASTER DOUBLE BRIDGE CRANES

Overall Length	Bridge Sect. No.	Max. Over-Hang	3-TON CAPACITY			Bridge Sect. No.	Max. Over-Hang	5-TON CAPACITY		
			No. ME-67 Non-Elect.	No. ME-68 Elect.	No. ME-69 Elect.			No. ME-77 Non-Elect.	No. ME-78 Elect.	No. ME-79 Elect.
			Hand Chain Drive		Motor Drive			Hand Chain Drive		Motor Drive
10'	ME-23	1.75'	1920	2020	2245	ME-23	2.00'	2290	2330	2565
12'	ME-23	2.00'	2130	2170	2395	ME-23	2.00'	2440	2480	2715
14'	ME-23	2.25'	2280	2320	2545	ME-23	2.25'	2590	2630	2865
16'	ME-23	2.75'	2440	2480	2705	ME-23	2.50'	2750	2790	3025
18'	ME-23	3.00'	2590	2630	2855	ME-23	2.50'	2900	2940	3175
20'	ME-23	3.25'	2740	2780	3005	ME-23	2.75'	3050	3090	3325
22'	ME-23	3.50'	2890	2930	3155	ME-23	3.00'	3200	3240	3475
24'	ME-23	4.00'	3040	3080	3305	ME-23	3.25'	3350	3390	3625
26'	ME-24	4.50'	3200	3240	3465	ME-24	4.25'	4620	4660	4895
28'	ME-24	5.00'	3350	3390	3615	ME-30	4.75'	5365	5400	5640
30'	ME-24	5.50'	3500	3540	3765	ME-30	5.25'	5645	5685	5920
32'	ME-24	6.00'	3650	3690	3915	ME-31	5.50'	6330	6370	6605
THREE TRUCK CRANES										
36'	ME-23	6.00'	4700	4790	5020	ME-23	6.00'	5165	5255	5495
40'	ME-23	6.00'	5000	5090	5320	ME-23	6.00'	5465	5555	5795
44'	ME-23	6.00'	5300	5390	5620	ME-23	6.00'	5765	5855	6095
48'	ME-23	6.00'	5610	5700	5930	ME-23	6.00'	6075	6165	6405
52'	ME-24	6.00'	5910	6000	6230	ME-24	6.00'	8615	8705	8945
56'	ME-24	6.00'	6220	6310	6540	ME-24	6.00'	9085	9125	9415
60'	ME-24	6.00'	6520	6610	6840	ME-30	6.00'	10655	10745	10985

Note: Standard overhang for all cranes—10 inches. See page 154 for details of various Bridge Sections. Maximum overhangs listed above are based on the use of standard length RailMaster trolleys supporting rated capacity loads. Crane capacity is for total load exclusive of trolleys and hoist.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



## Double Bridge RailMaster Cranes

3-TON

No. ME-67

No. ME-68

No. ME-69

5-TON

No. ME-77

No. ME-78

No. ME-79

See table on opposite page.

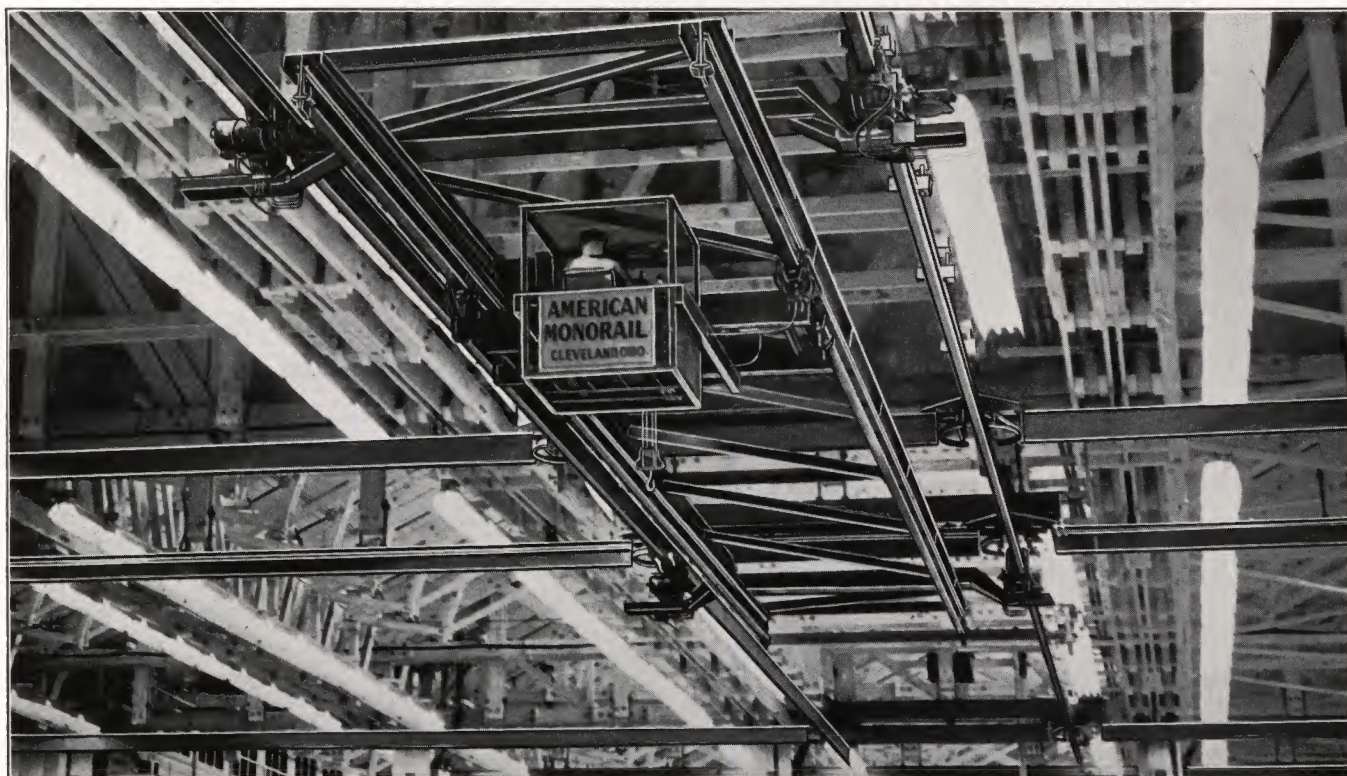
In basic design the double bridge crane serves two purposes. By mounting the electric hoist between the two bridges, hook clearance can be brought up close to the bottom of the bridge track. Picture at bottom of page 173 illustrates this low headroom feature in connection with 5-ton carrier.

Another advantage is the longer crane possibilities. With the stiffening effect of two bridge beams given added strength by diagonal braces, cranes can be built to cover maximum areas as shown in the installation picture to the right.

Complete specifications covering materials and construction of RailMaster Double Bridge Cranes are listed beneath dimensional drawing on page 165. Schedule of standard lengths and weights shown on page 166.

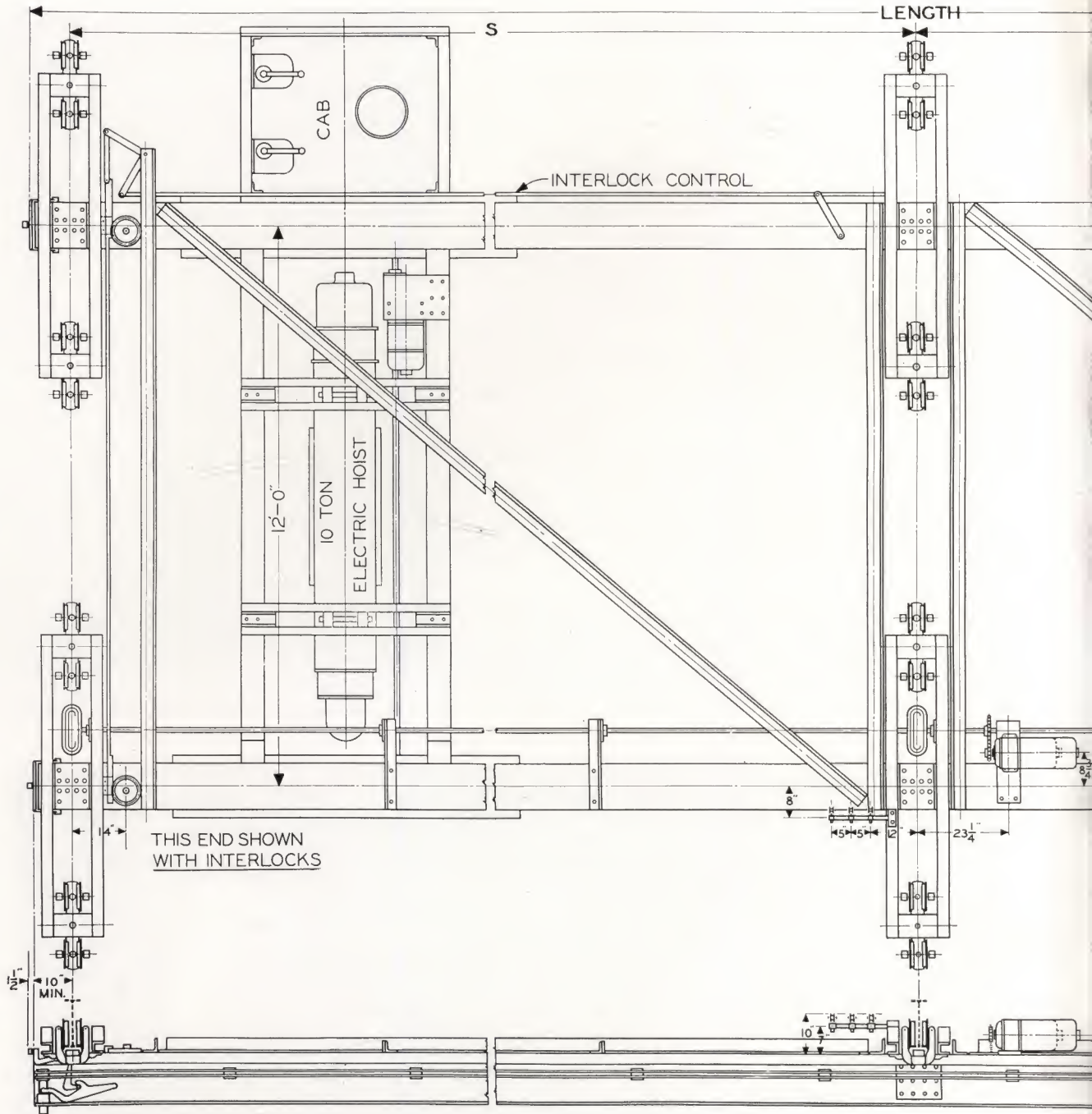


This 320 foot double bridge crane operates on 17 runways. It interlocks on either end with cranes in adjoining areas.



With swivelling end trucks at each corner, this crane, when centered in turntables, can be shifted to transfer runways for operation by same procedure over any set of cranes in the building.





# RailMaster Ten-Ton Cranes

No. ME.87 Hand Chain—Non-Electrified

No. ME-88 Hand Chain—Electrified

No. ME-89 MonoTractor Operated—Electrified

## SPECIFICATIONS

Crane Bridges: See load table on page 154.

End Trucks: Heavy Steel Channel.

Crane Wheels: No. ME-20 Drop Forged, Hardened Treads.

Wheel Bearings: Double row, New Departure precision ball.

Electrification, Motor Unit and Hand Chain Drive: Specifications similar to those listed on page 165.

All other specifications will be furnished for each proposal to cover various conditions applying to each project.



Spans between runways can be determined by reference to loading table on page 154 covering the various RailMaster Double Bridge Sections for use as bridges. Under no circumstances will it be possible to decrease the spread between runways beyond the limits indicated in table mentioned.

Since all cranes of this capacity are suspended by special hangers from superstructure, it is advisable to consult with our engineering department in advance of building completion. Such consultation may result in considerable saving in the ultimate cost.

[ 169 ]





Swinging Jib for service over shipping dock interlocks with crane over platform offering complete coverage.

## Special RailMaster Swinging Jib

### NON-INTERLOCKING

- No. MR-1—Non-Electrified
- No. MR-2—Electrified

Since almost every jib fluctuates in length of boom or height of mast, as well as capacity to be carried, no standard material specifications can be set.

RailMaster Jibs are designed for operation over a definite area from the mounting post or column. They also interlock as shown in illustration above or distribute traffic by interlocking to tracks radiating from a central track line.

Another essential purpose illustrated above is the service afforded over receiving or shipping docks. When not in use, the jib is latched against the side structure to permit passage of railroad engine and freight cars along siding.

### INTERLOCKING

- No. MR-3—Non-Electrified
- No. MR-4—Electrified

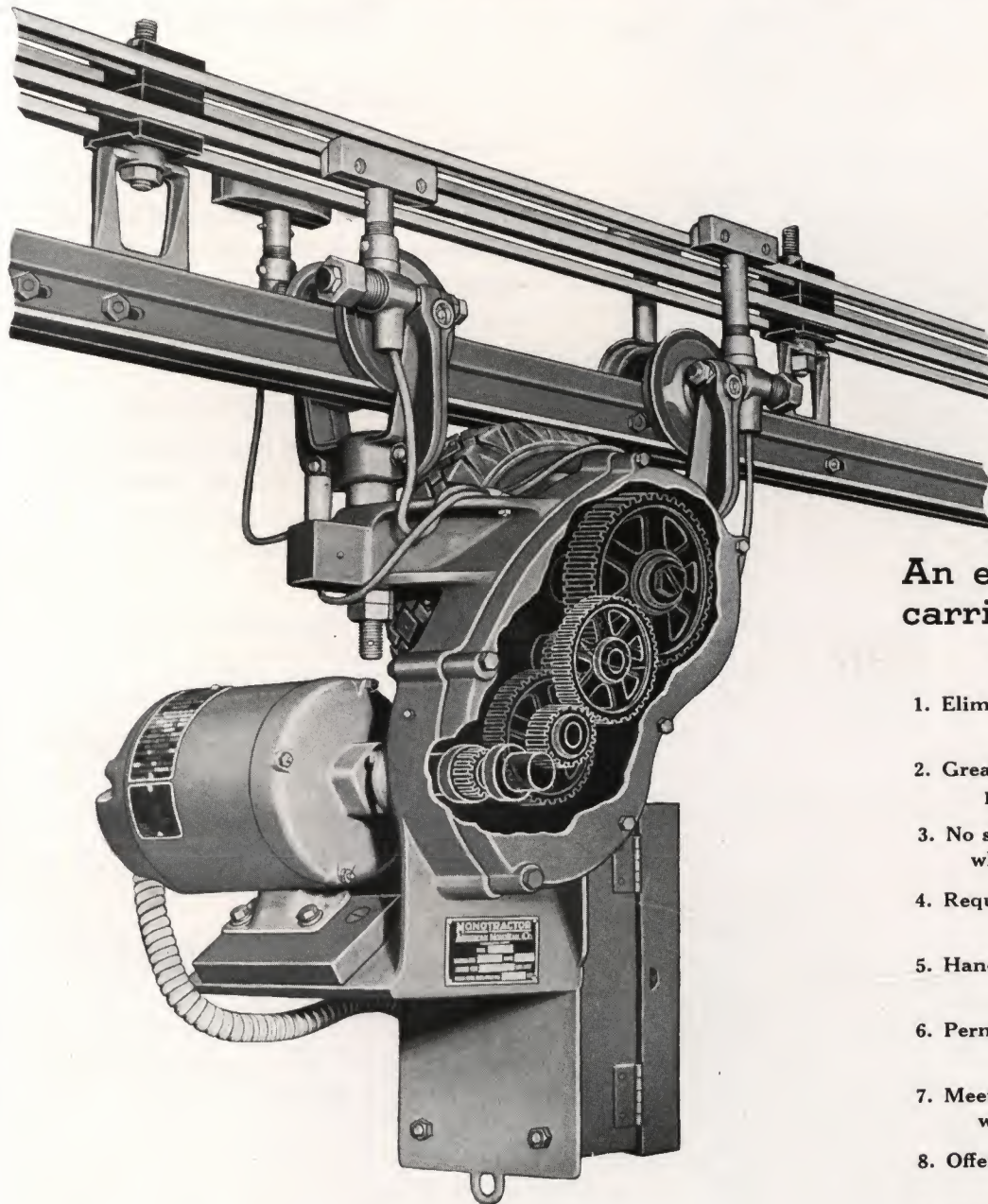
Certified drawings will be submitted showing details of construction and dimensions to meet each particular application.

These heavy jibs are mounted by means of a stub mast hinged on bronze bearings which are set in heavy structural brackets. Track section is composed of a standard RailMaster track to meet the required capacity.

Request for quotation should include information covering weight of load, height of mast, length of boom and whether interlock or overhang is required.



# The American MonoTractor



## A New Principle

Gear head motor drives wheel equipped with tire. Contact of solid rubber against bottom of track furnishes increased traction.

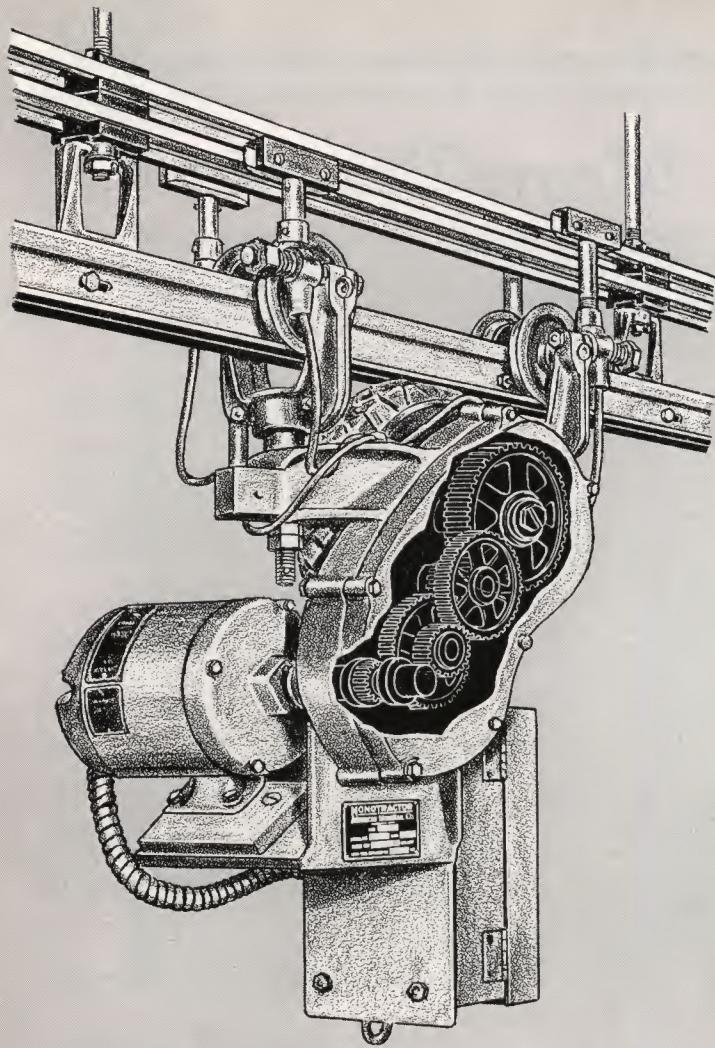
## An electric drive for carriers, cranes and hoist units

1. Eliminates wear of track flanges or wheel treads.
2. Greater draw-bar pull per horsepower of motor applied.
3. No slipping or spinning of wheels when starting or on curves.
4. Requires no added weight to obtain traction.
5. Handles loads up or down grades under perfect control.
6. Permits use of squirrel cage motors.
7. Meets any current characteristics without special equipment.
8. Offers unlimited range of control possibilities.
9. Stops automatically within 1½" of pre-set limits.
10. Provides greater mileage without repair.
11. Easily replaced rubber tire is only wearing part.
12. Can be applied to carriers or cranes already installed.
13. Operates on any track having a smooth undersurface.
14. Lower initial cost on most applications.

Such a drive wheel delivers tremendous drawbar pull to propel heavy loads on carriers or cranes under perfect control.

With a fractional horsepower motor it is possible to pull combined loads exceeding 10,000 pounds along horizontal runways. Grades of 18% have been carried with a single MonoTractor. Such operation comes from the drawbar pull created by increased tractive contact of the solid tire together with the non-slipping grip of rubber against steel. Since control possibilities are unlimited, speeds from 5 F.P.M. to 600 F.P.M. for either short or long hauls can be applied to both carrier or crane propulsion.





**STANDARD MONOTRACTOR**

# AMERICAN MonoTractor

## Greater Draw-Bar Pull

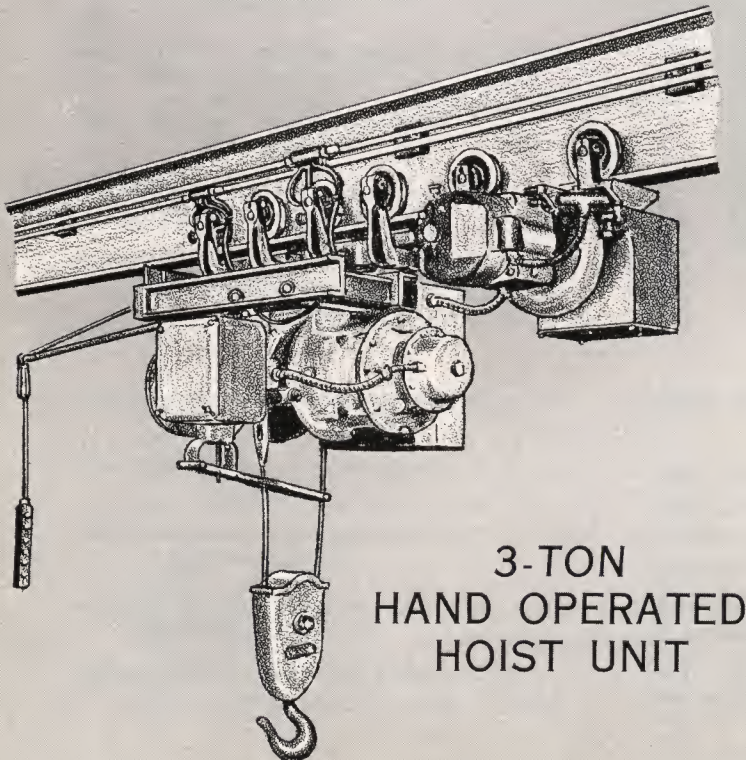
Increased tractive contact of the rubber tire against the bottom of the steel rail furnishes greater draw-bar pull required to handle heavy loads up or down grades under perfect control.

## Eliminates Wear

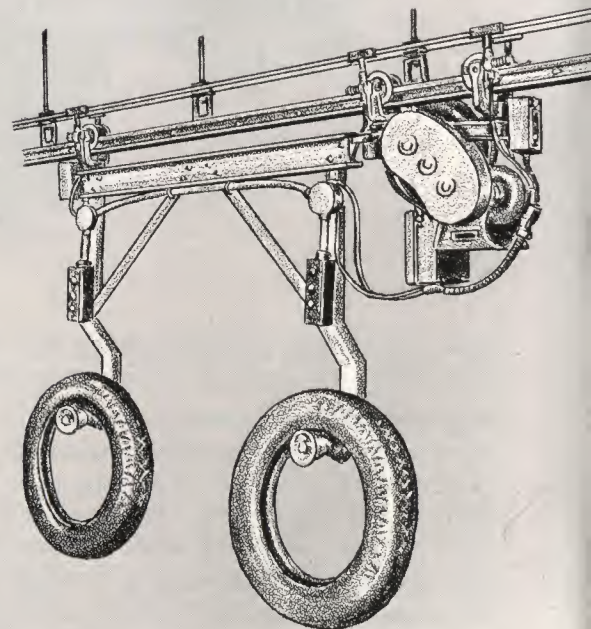
Since no added weight is required to obtain traction, wear of track flanges or wheel treads cannot occur. The positive drive prevents slipping or spinning of wheels when starting or travelling around curves.

## Low Operating Cost

With the possibility of using squirrel cage motors initial cost is kept low. Maintenance costs are held down and greater mileage is provided without repair. Tires, which seldom wear heavily when kept properly inflated, are easily replaced.



**3-TON  
HAND OPERATED  
HOIST UNIT**



**AUTOMATIC CARRIER**



# MONORAIL Advantages

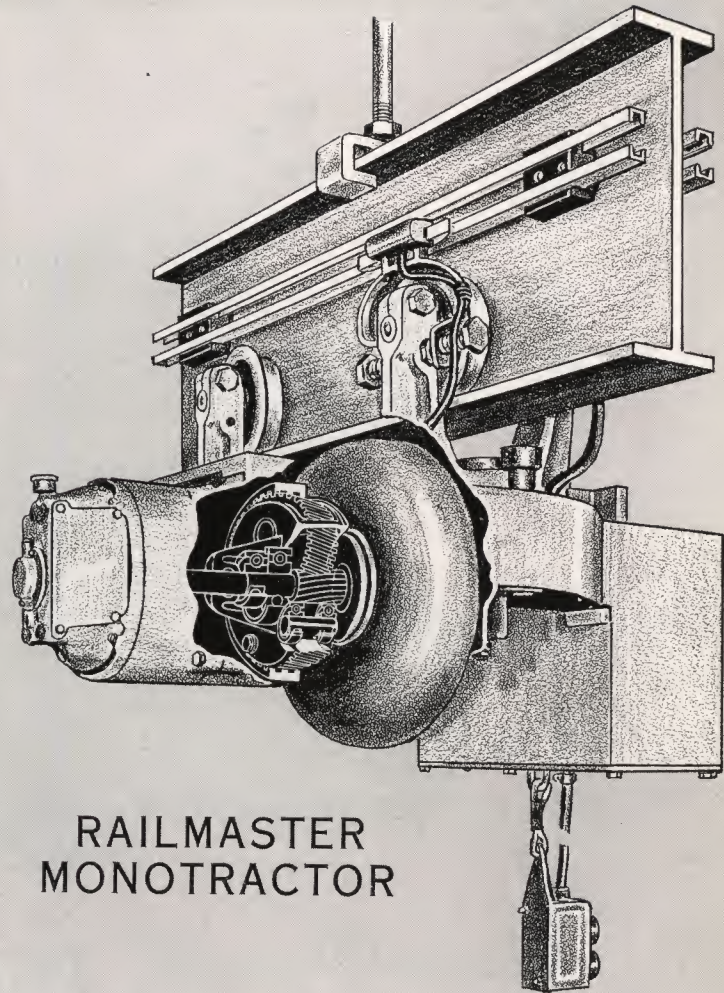
## Wide Application

No special equipment is necessary to meet current characteristics, so that, with a wide variety of control possibilities, Mono-Tractors can be applied to carriers or cranes operating on any smooth bottom track for unlimited automatic performance.

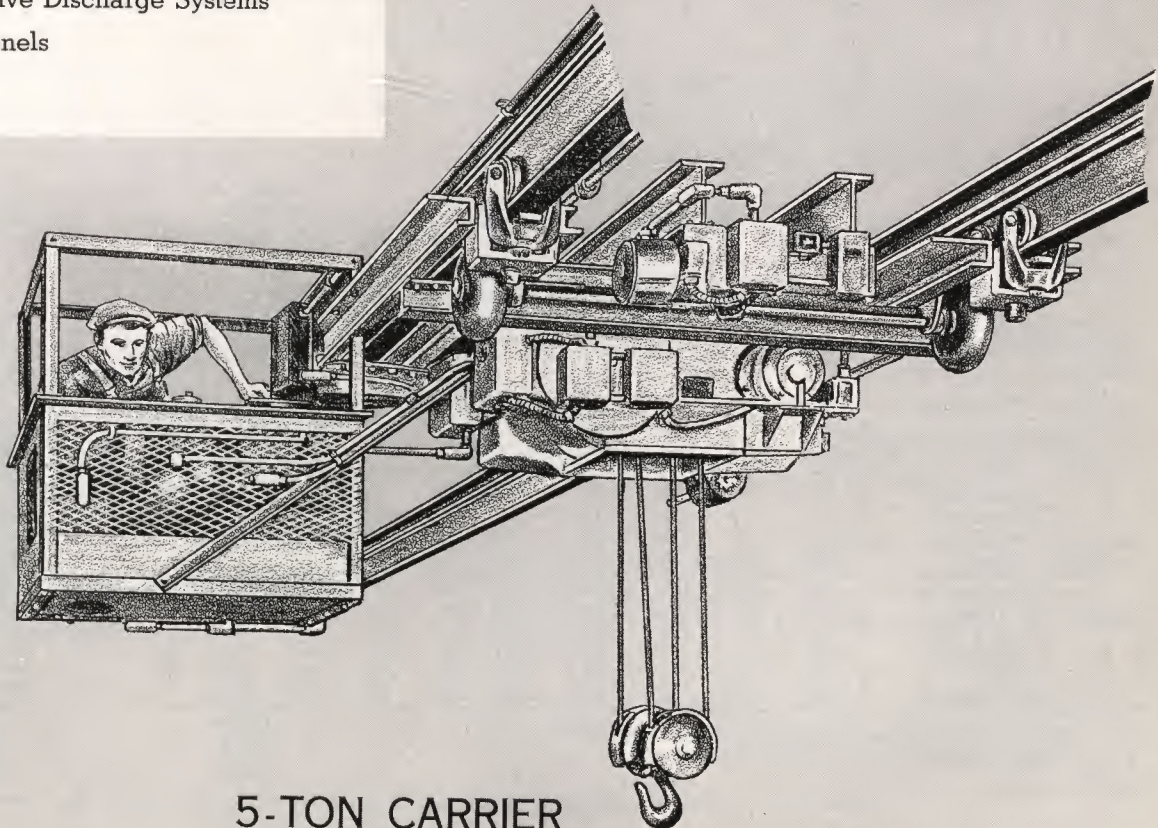
## Automatic Handling

Features mentioned above justified the development and successful installation of automatic handling systems of the following primary types:

1. Station Selectors
2. Selective Automatic Switching Devices
3. Electrical Block Systems
4. Automatic Trains
5. Automatic Loading Devices
6. Automatic Selective Discharge Systems
7. Cycle Control Panels



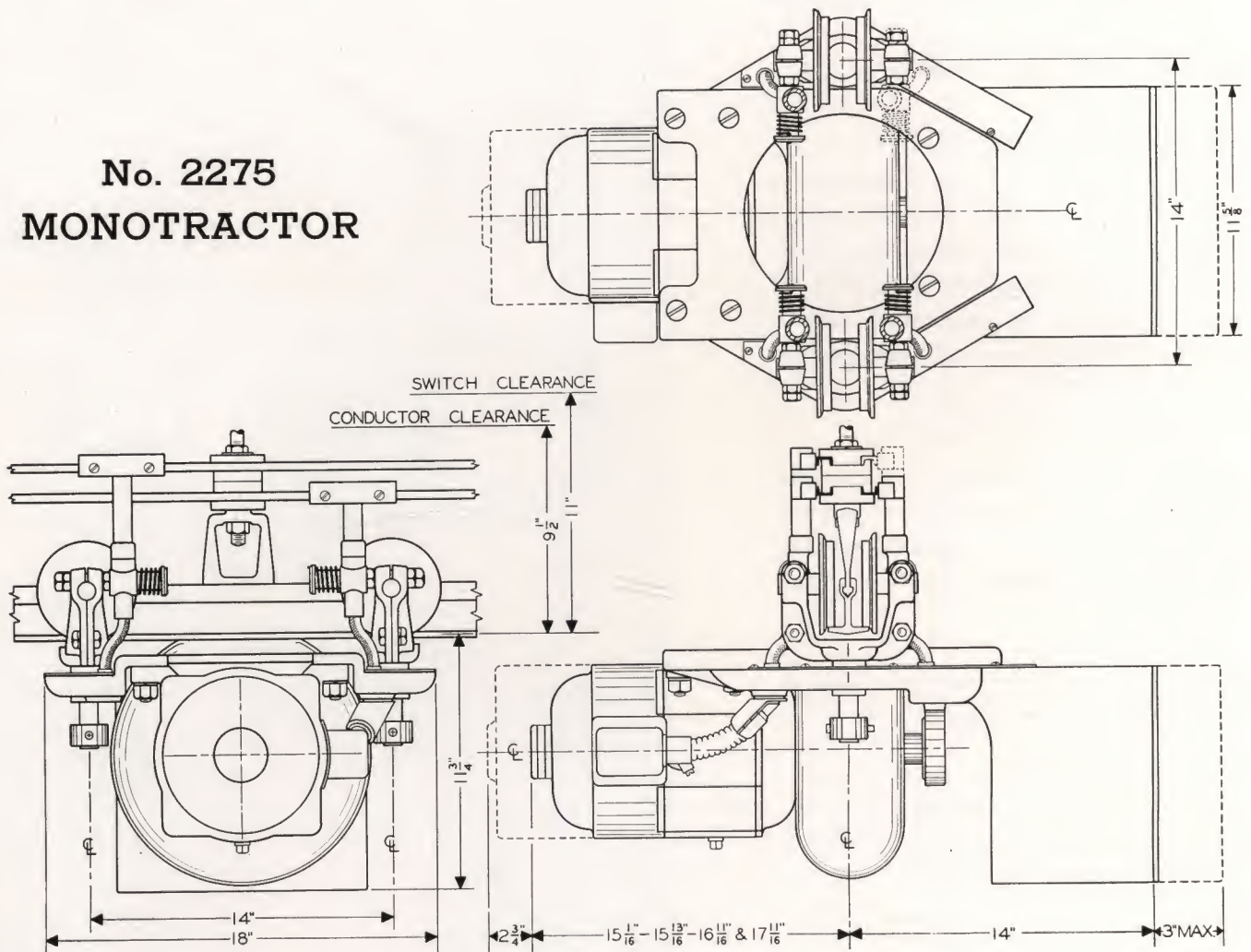
RAILMASTER  
MONOTRACTOR



5-TON CARRIER  
FOR DOUBLE BRIDGE CRANES



## No. 2275 MONOTRACTOR



## Horse Power and Travel Speed Table For No. 2275 MonoTractors

Current Characteristics	A.C. Squirrel Cage & Slip Ring 110-220 & 440 Volt 2 & 3 Phase 60 Cycle D.C. 110 & 220 Volt					Squirrel Cage & Slip Ring A.C. 110, 220 & 440 Volt 2 & 3 Phase 25 & 50 Cycle				Single Phase Motors A.C. 110 & 220 Volt						
										60 Cycle			50 Cycle			
Motor Speed—F. L.	1650	1100	810	630†	510†	1375	835*	675	425†	1600	1500	1100	1325	1250	915	
Horse Powers Available in Given Motor Speeds	.75 1.00 1.50 2.00	.50 .75 1.00 1.50	.33 .50 .75 1.00	.25 .33 .50 .75	.16 .25 .33 .50	.62 .83 1.25 1.66	.41 .62 .83 1.25	.27 .41 .62 .83	.13 .20 .27 .41	.75 .75 1.00 1.50		.50	.62 .83 1.25	.62		.41
Travel Speeds For Given Horse Power Combinations For No. 2275 MonoTractors	375 310 290 245 215 190	250 210 185 160 145 125	185 155 135 115 105 90	145 120 105 95 85 70	115 95 85 75 65 60	310 260 230 200 180 155	190 155 140 125 110 95	150 125 115 100 90 75	95 80 70 65 55 45	360 300 270 235 210 180	340 285 255 220 195 170	240 210 185 160 145 125	300 250 225 195 175 150	285 235 210 185 165 145	200 175 155 135 120 105	

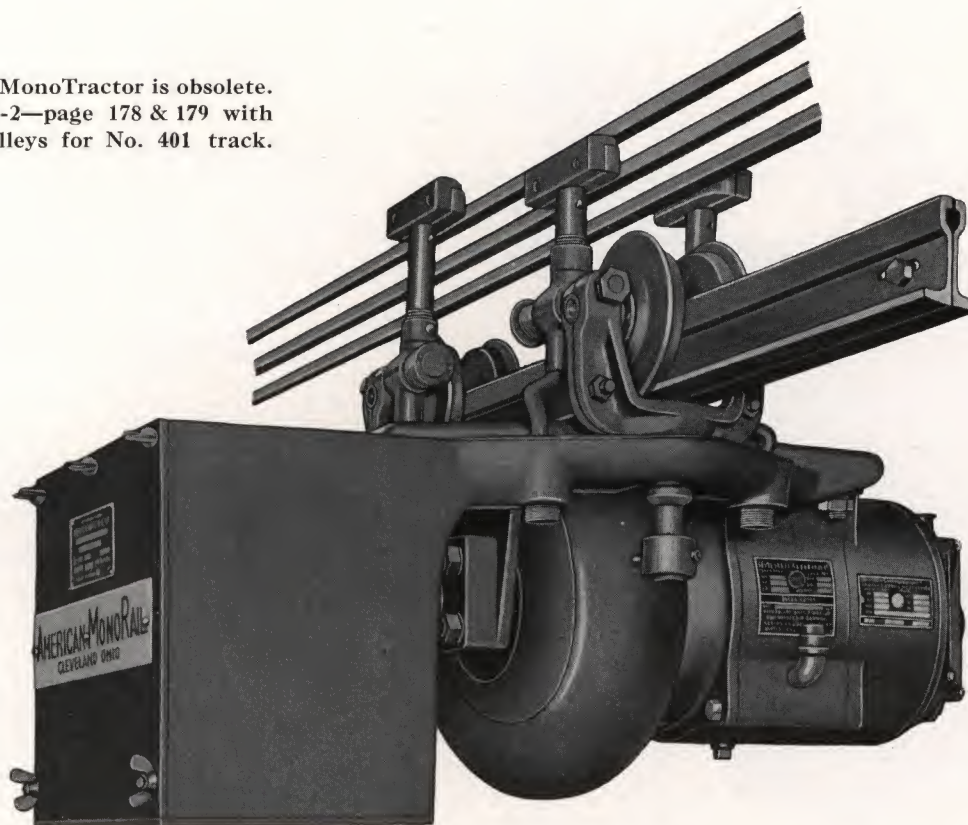
†Higher Motor Speeds Should be Used where Possible.

\*Cannot be Furnished for 25 Cycle Current.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings



NOTE—This MonoTractor is obsolete.  
Use No. MV-2—page 178 & 179 with  
standard trolleys for No. 401 track.



## No. 2275 American MonoTractor

For Standard MonoRail Track

### SPECIFICATIONS

**Trolley Wheels:** No. 164 Drop forged, hardened treads.

**Trolley Yokes:** No. 245 Malleable Iron.

**Frame:** No. V-2275 Malleable Iron.

**Tire:** No. V-2300 12"x3" Solid Rubber.

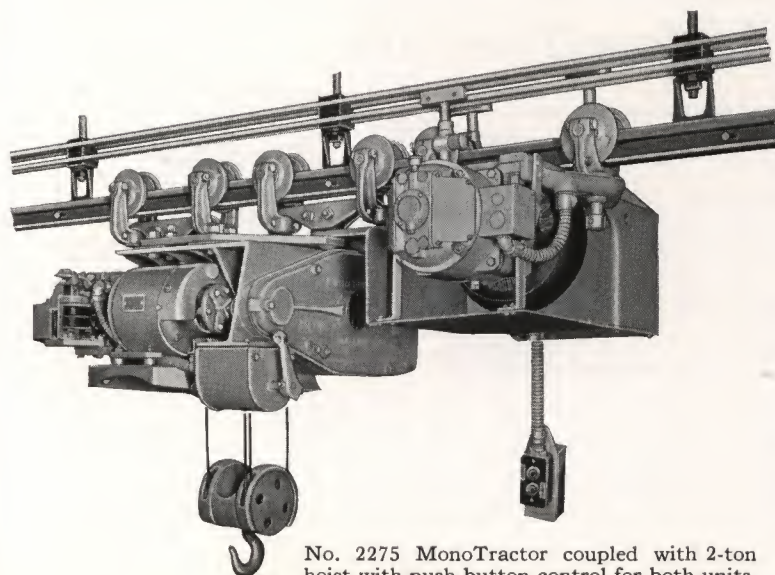
**Motor Unit:** Full ball bearing, planetary gear head type. Gears run in oil bath. Can be furnished with multiple disc integral brakes.

**Efficiency Rating:** 90% For chart on page 258.

**Control:** Standard—Pushbutton. See page 188 for variations.

**Weight:** Average 300 pounds.

**Finish:** Green Enamel.



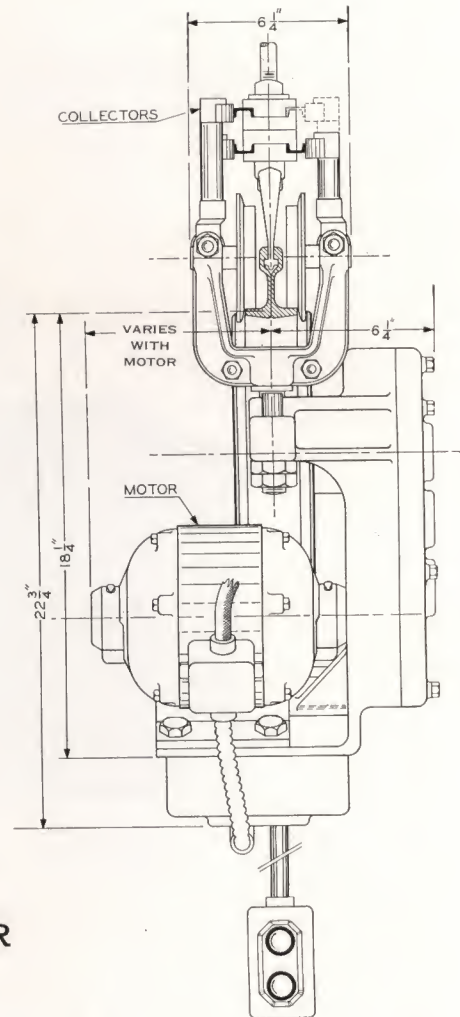
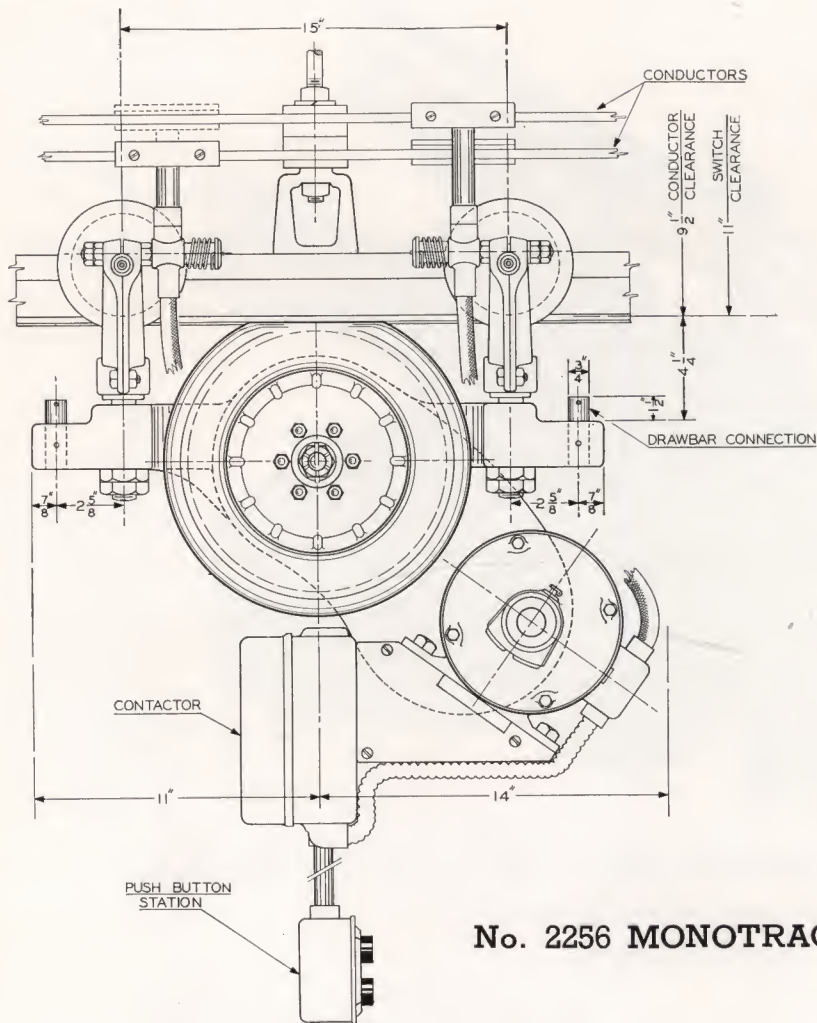
No. 2275 MonoTractor coupled with 2-ton hoist with push button control for both units.

No. 2275 MonoTractor is a compact means of propulsion for carriers, hoists or cab units. It consists of a gear head motor unit, as described above, assembled on a heavy malleable frame. A rubber tire is mounted on the motor shaft and when contacted against the bottom of Standard MonoRail Track delivers tremendous draw bar pull. This MonoTractor operates at a fixed speed as determined in table on opposite page.

A compartment in the frame of this unit holds the contactor and other apparatus for simple push button control. On pages 187 and 188 will be found a general description of the possible control variations obtainable.

See charts on pages 258 and 259 offering simple methods for determining horse power of motor for various applications. Table on opposite page gives horse power speed and current types available in this MonoTractor.





**No. 2256 MONOTRACTOR**

## Horse Power and Speed Combinations For No. 2256 MonoTractors

Current Character- istics	A.C. Squirrel Cage Motors 220, 440 and 550 Volts 2 & 3 Phase								D.C. Motors Compound Wound 32, 115 & 230 Volt			A.C. Single Phase 110 & 220 Volt Motors 60 Cycle		
	60 Cycles			50 Cycle			25 Cycle							
Horse Power of Motors	.25 .33 .50	.25 .33 .50	.25 .33	.20 .27 .41	.20 .27 .41	.20 .27	.25 .33 .50	.25 .33	.25 .33 .50	.25 .33 .50	.25 .33 .50	.25 .33 .50	.25 .33 .50	.25 .33
Motor RPM	1725	1125	850	1425	930	710	1425	710	1725	1125	850	1725	1125	850
Travel Speeds Feet Per Minute	100 145 200 240 295	65 95 130 160 190	50 70 100 115 140	85 120 165 200 245	55 80 105 130 160	40 60 80 100 120	85 120 165 200 240	40 60 80 100 120	100 145 200 240 295	65 95 130 160 190	50 70 100 115 140	100 145 200 240 295	65 95 130 160 190	50 70 100 115 140

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# No. 2256 MonoTractor

Furnished for operation on any track  
having smooth bottom flanges.

## SPECIFICATIONS (For Standard MonoRail Track)

**Trolley Wheels:** No. 164 Drop forged, hardened tread.

**Trolley Yokes:** No. 102 Drop forged.

**Frame:** No. V-2257 Malleable Casting.

**Gears:** Steel spur gears running in light grease.

**Tire:** No. V-2300 12 x 3 Solid Rubber.

**Motor:** Full ball bearing, high torque type—up to  $\frac{1}{2}$  h.p.—can be furnished totally enclosed. Integral Disc brake also available.

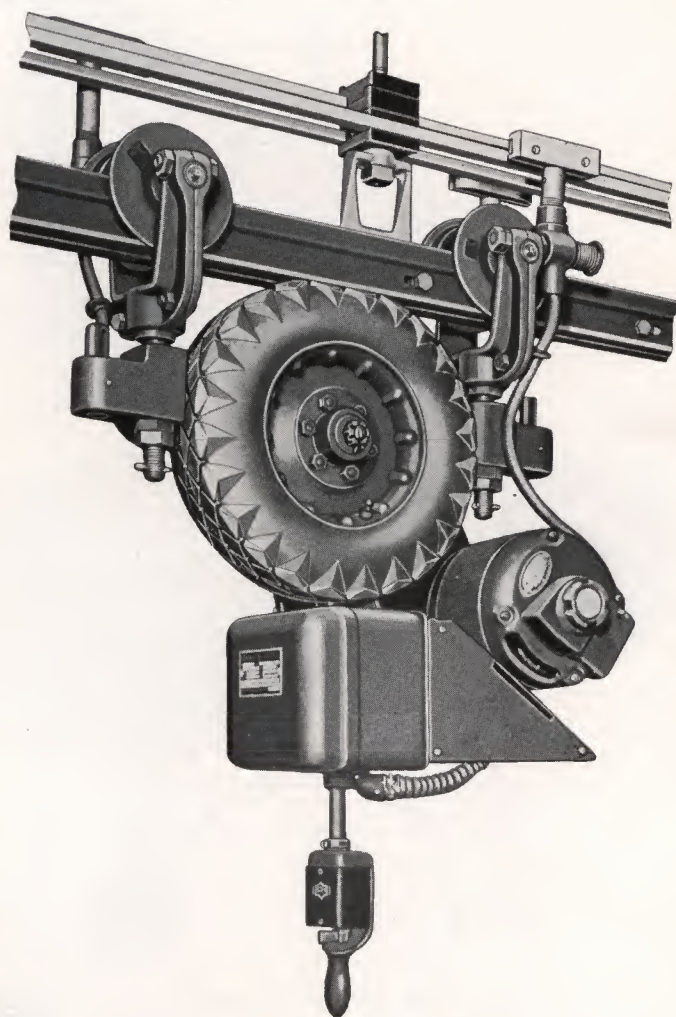
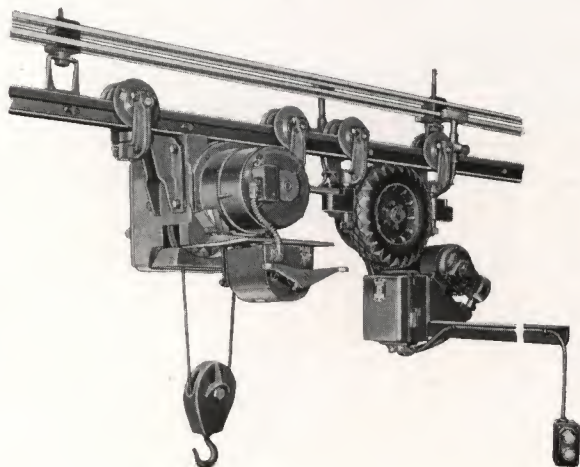
**Efficiency Rating:** 85% For chart on page 258.

**Controls:** Standard—push button. See page 188 for variations.

**Weight:** Average 185 pounds.

**Finish:** Green Enamel.

No. 2256 MonoTractor consists of a totally enclosed motor geared in train to a rubber tire which is contacted against the bottom of any smooth MonoRail track. Operating parts are assembled on a malleable frame with the spur gears enclosed and running in light grease. Traveling speed may be changed within the specified limits for each motor as listed in table on opposite page.

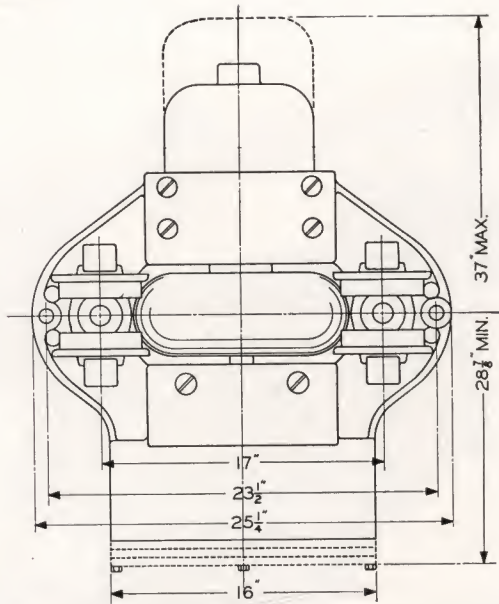


Where necessary for accurate stopping by remote or automatic control or to prevent drift on grades, this MonoTractor can be equipped with a solenoid brake attached to the high speed shaft coupled to the drive motor.

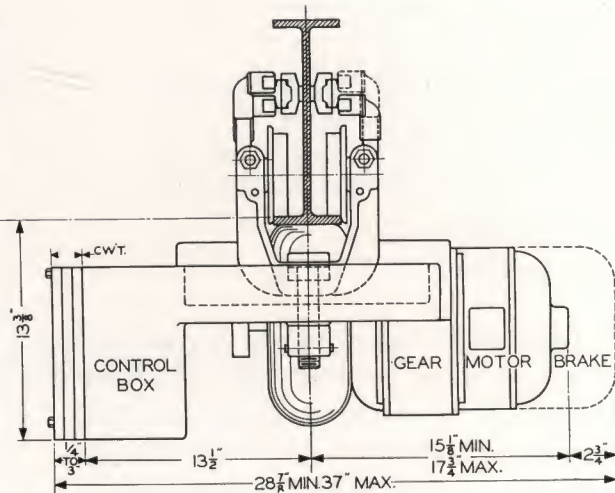
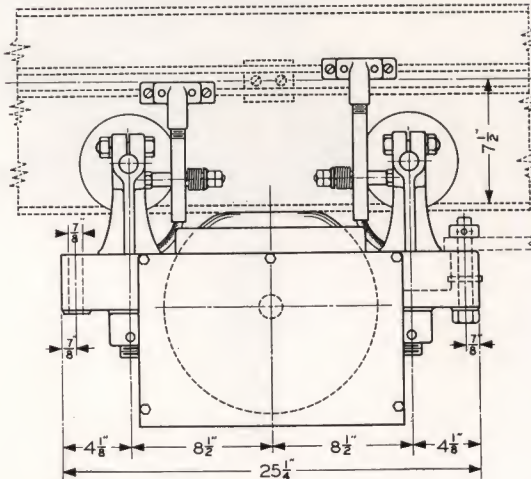
Horse power of motor required for given loads and grades can be quickly determined by reference to charts on pages 258 and 259. Table on opposite page shows power, speed and current combinations available.

Automatic operations made possible with American MonoTractors are described in detail on page 187 and several special automatic carriers are shown on page 186. Variations of available control features are outlined on page 188.





## No. MV-2 RAILMASTER MONOTRACTOR



## Horse Power and Travel Speed Table For No. MV-2 MonoTractors

Current Characteristics	Squirrel Cage & Slip Ring A.C. 110, 220 & 440 V. 2 & 3 Phase 60 Cycle D.C. 110 & 220 Volt					Squirrel Cage & Slip Ring A.C. 110, 220 & 440 V. 2 & 3 Phase 25 & 50 Cycle				Single Phase Motors A.C. 110 & 220 Volt					
										60 Cycle			50 Cycle		
Motor Speed—F.L.	1650	1100	810	630†	510†	1375	835*	675	425†	1600	1500	1100	1325	1250	915
Horse Powers Available In	.75	.50	.33	.25	.16	.62	.41	.27	.13			.50			.41
Given Motor	1.00	.75	.50	.33	.25	.83	.62	.41	.20	.75	.75		.62	.62	
Speeds	1.50	1.00	.75	.50	.33	1.25	.83	.62	.27	1.00			.83		
	2.00	1.50	1.00	.75	.50	1.66	1.25	.83	.41	1.50			1.25		
Travel Speeds For Given	415	275	200	160	130	345	205	170	105	400	375	275	335	315	230
Horse Power	345	230	170	130	105	285	175	140	90	335	315	230	280	260	190
Combinations	310	205	150	115	95	255	155	125	80	300	280	205	250	235	170
For No. MV-2	270	180	130	100	85	225	135	110	70	260	245	180	215	205	150
MonoTractors	240	160	120	90	75	200	120	100	60	230	220	160	195	180	135
	210	140	100	80	65	175	105	85	55	200	190	140	170	160	115

†Higher Motor Speeds Should Be Used Where Possible.

\*Cannot Be Furnished For 25 Cycle Current.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# No. MV-2 RailMaster MonoTractor

Will operate on any flat bottomed rail

## SPECIFICATIONS

(Trolleys for RailMaster Track)

**Trolley Wheels:** No. MA-7 Drop forged, hardened tread.

**Trolley Yokes:** No. MA-6 Malleable Iron.

**Frame:** No. MV-2 Malleable Iron.

**Rubber Tire:** No. V-2300 12" x 3" Solid Rubber.

**Motor Unit:** Fully enclosed. Full ball bearing, planetary gear head type, gears running in oil bath. Can be furnished with multiple disc, integrally built brake operating directly off motor shaft.

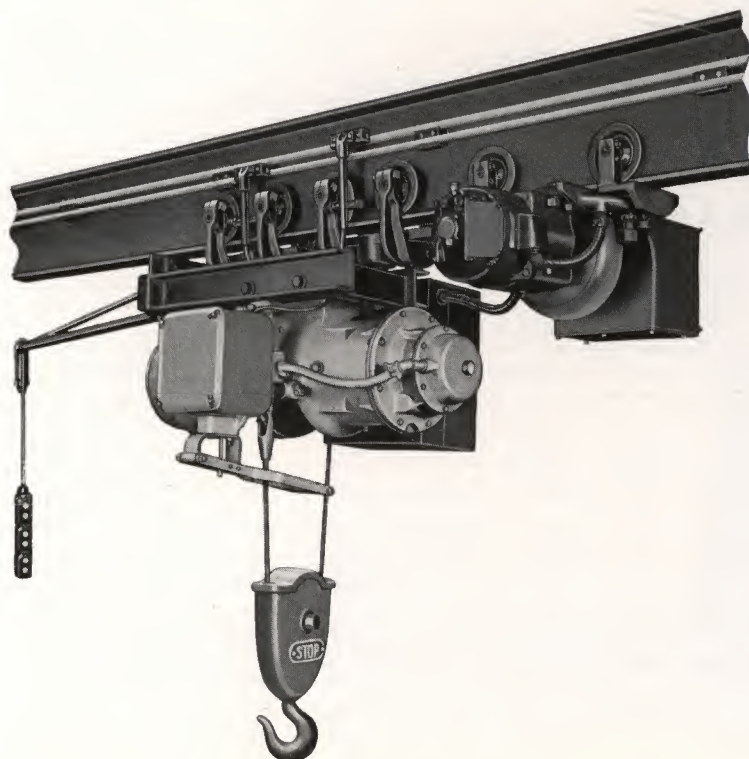
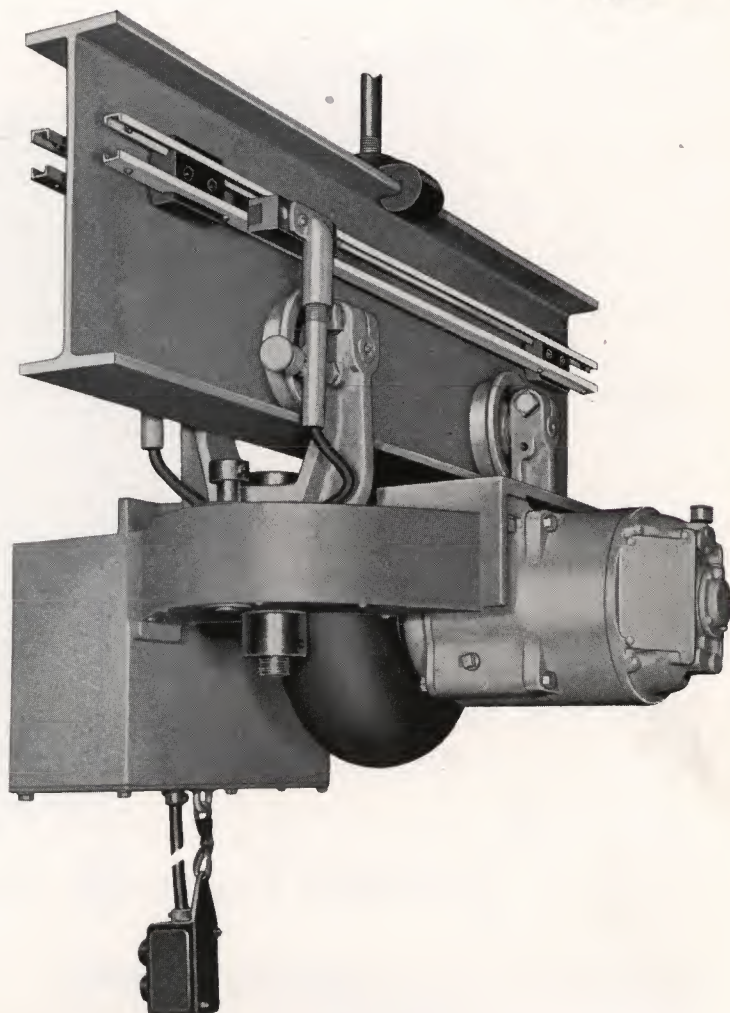
**Efficiency Rating:** 90% for chart on page 258.

**Control:** Standard—push button. See page 188 for variations.

**Weight:** Average 375 pounds.

**Finish:** Green Enamel.

No. MV-2 MonoTractor, a gear head motor unit designed for application to RailMaster carriers, will operate with equal success on any beam type track having a 4" flange width. Special trolleys can be furnished to accommodate other flanges.

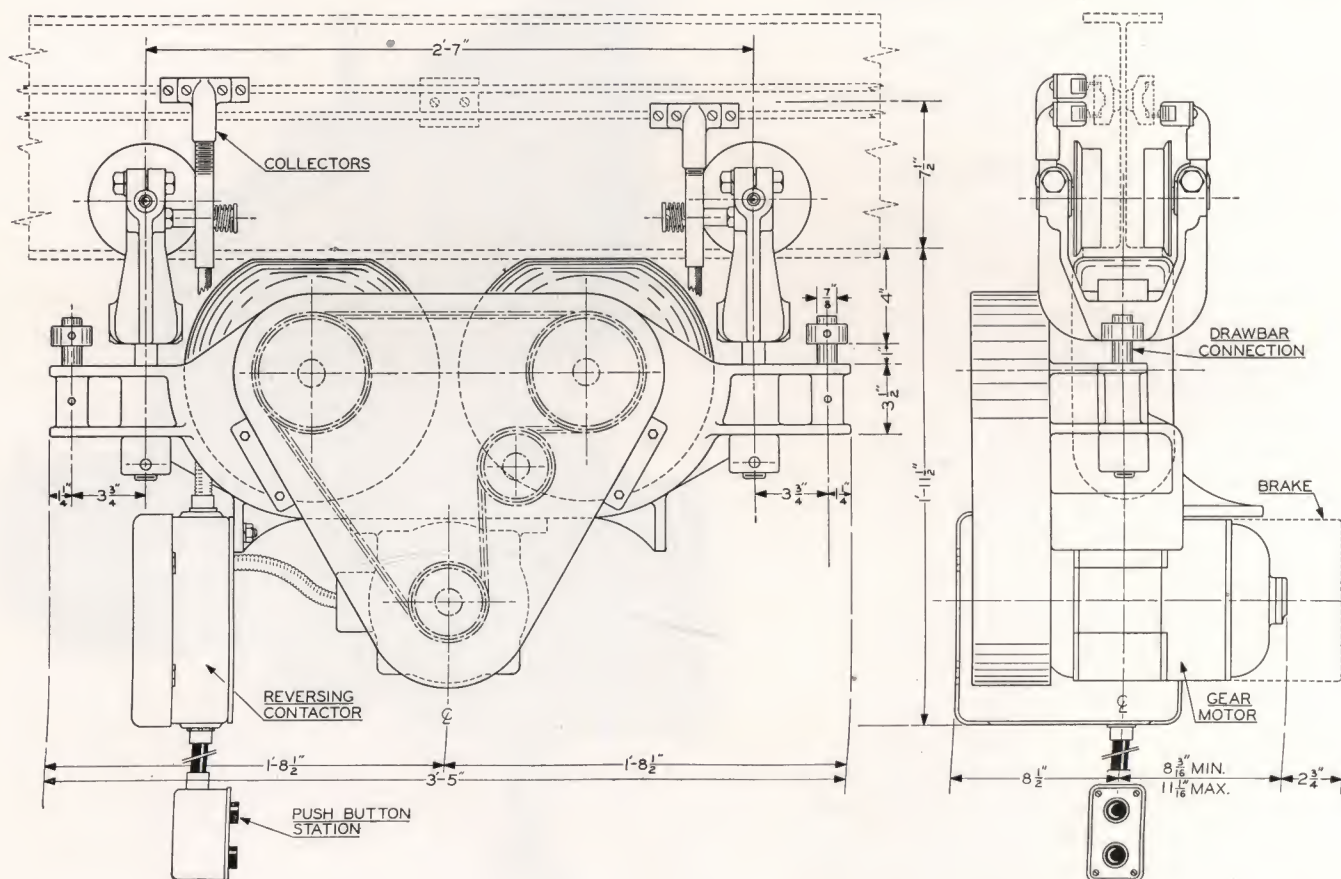


Features of this MonoTractor are similar to those of No. 2275 outlined on page 175, the increased speeds being obtained from the larger size of the 12" x 3" tire which offers greater contact area when contacted against the 4" RailMaster track flange.

Due to the strength of the heavy malleable frame, No. MV-2 MonoTractor will support direct mounting of a 2½-ton electric hoist as illustrated in the special unit shown on page 185. Such a compact mobile assembly permits flexible operation throughout complicated track systems which include turntables.

Table on opposite page gives power, speed and current combinations available. Charts on pages 258 and 259 offer quick means of determining horse power of motor required for given loads, grades and speeds. See page 188 for variations in control application.





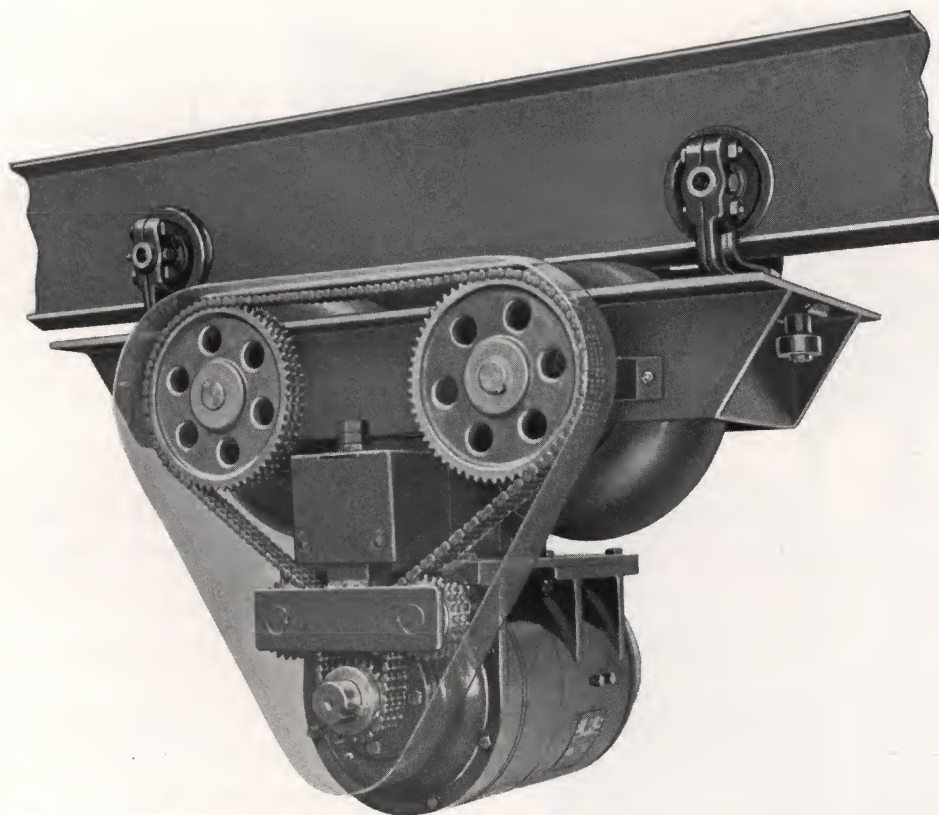
**Table of Speeds in Feet Per Minute**  
For Various Draw Bar Pull and Horse Power Combinations  
For No. MV-3 MonoTractors

H.P. of Motor	Draw Bar Pull													
	150 Lbs.	175 Lbs.	200 Lbs.	225 Lbs.	250 Lbs.	275 Lbs.	300 Lbs.	325 Lbs.	350 Lbs.	375 Lbs.	400 Lbs.	425 Lbs.	450 Lbs.	
$\frac{3}{4}$	165	140	125	110	100	90	85	75	70	65	62	59	55	
1	220	190	165	145	130	120	110	100	95	90	85	80	75	
$1\frac{1}{2}$	330	285	250	220	200	180	165	150	140	130	125	115	110	
2	440	375	330	295	265	240	220	205	190	175	165	155	145	
3	660	565	495	440	395	360	330	305	285	265	245	235	220	
5				735	660	600	550	510	470	440	415	390	365	
$7\frac{1}{2}$								760	710	660	620	580	550	

See page 258 for load chart giving allowable loads on grades for each given draw bar pull. The MV-3 two tire MonoTractor is available in A.C. 110-220-440 & 550 Volt, 2 & 3 Phase, Squirrel Cage and Slip Ring and in D.C. 32, 115 & 230 Volt Compound Motors.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## Double Wheel MonoTractor

**No. 2297 for Standard MonoRail  
No. MV-3 for RailMaster Track**

Made to operate on any flat bottomed track. All double-wheel MonoTractors are built to meet special requirements. No standard specifications are listed. Detailed drawings will be submitted on request.

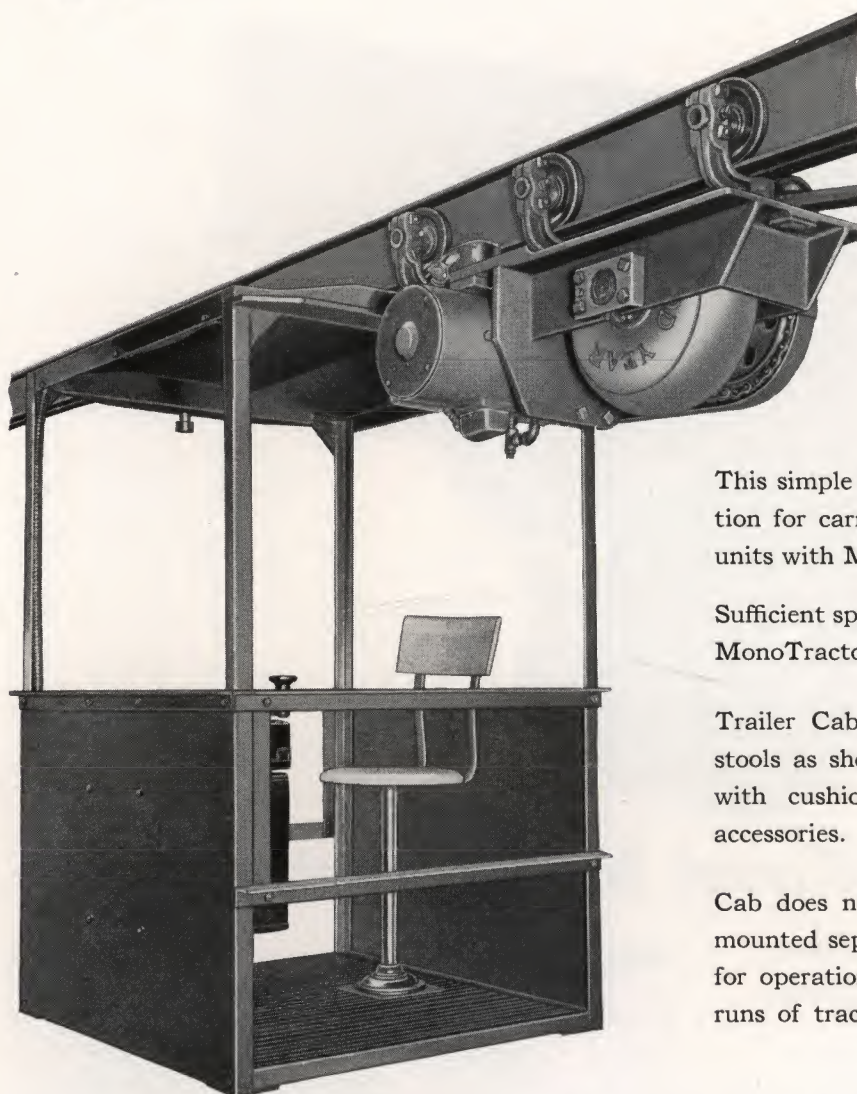
This Double-Wheel MonoTractor, consisting of gear head motor operating two rubber propulsion wheels by means of roller chain and sprockets, is particularly adapted to a train of carriers or where grades, heavy loads or high speeds occur. See table on opposite page for wide range of draw bar pull, horse power and speed combinations available. Charts on pages 258 and 259 determine necessary horse power for given loads, grades and speeds. Motors can be furnished with this MonoTractor to meet almost any current and voltage requirement. Disc brake operating directly on the motor shaft assures safe stopping on grades as well as accurate spotting on automatic installations.

Any type of control for direct, remote or automatic operation can be applied. See pages 187 and 188 for complete description of potential variations in automatic equipment and control features available.



No. MV-3 MonoTractor climbs an 18% grade between buildings.





# Trailer Type Open Cab

No. 2270 For Standard  
MonoRail Track

No. MV-10 for RailMaster  
Track

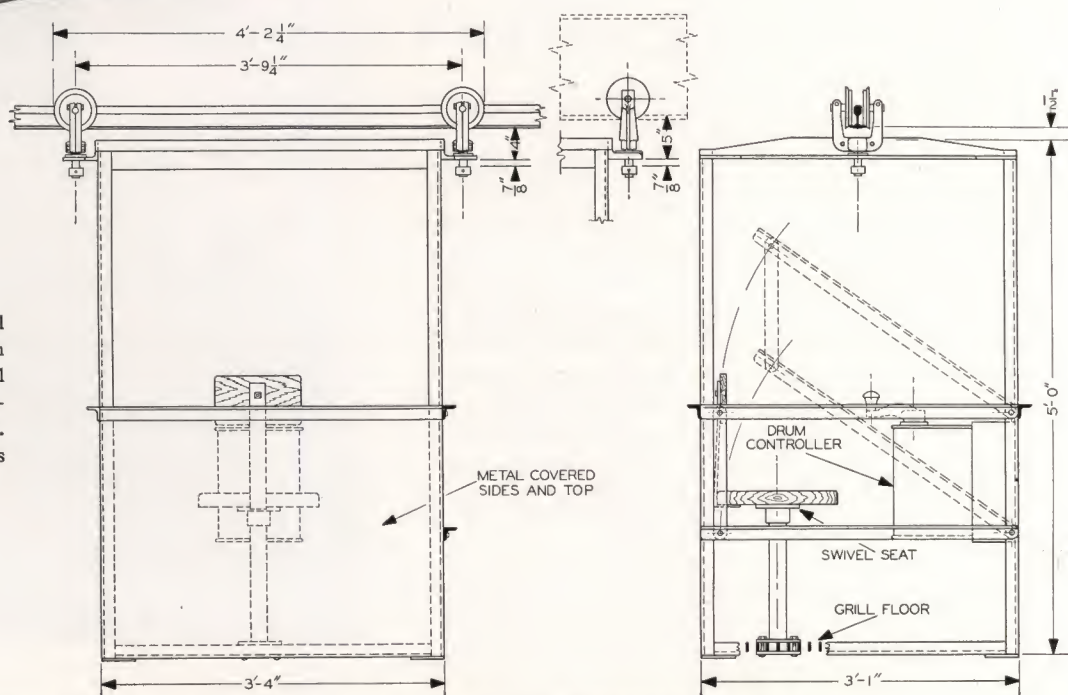
This simple Trailer Type Cab provides a control station for carriers made up of hoist, trolley and other units with MonoTractor mounted independently.

Sufficient space is allowed for controllers operating the MonoTractor and other apparatus as required.

Trailer Cabs are regularly equipped with swiveling stools as shown in illustration, but can be furnished with cushion seat, gong, brake, light and other accessories.

Cab does not include MonoTractor which must be mounted separately. It is therefore not recommended for operation on crane bridges or on relatively short runs of track.

Drawing includes overall dimensions together with clearances in this general view for standard American MonoRail trolley. The center inset shows RailMaster trolley clearance.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Mono-Tractor Type Open Cab

No. 2260 For Standard MonoRail Track  
No. MV-11 For RailMaster Track

This compact cab and drive unit were designed for operation on a crane bridge or under conditions where operator must remain close to the hoist for accurate hook service.

The MonoTractor drive is mounted through the top of cab on trolleys of sufficient capacity to carry the combined load.

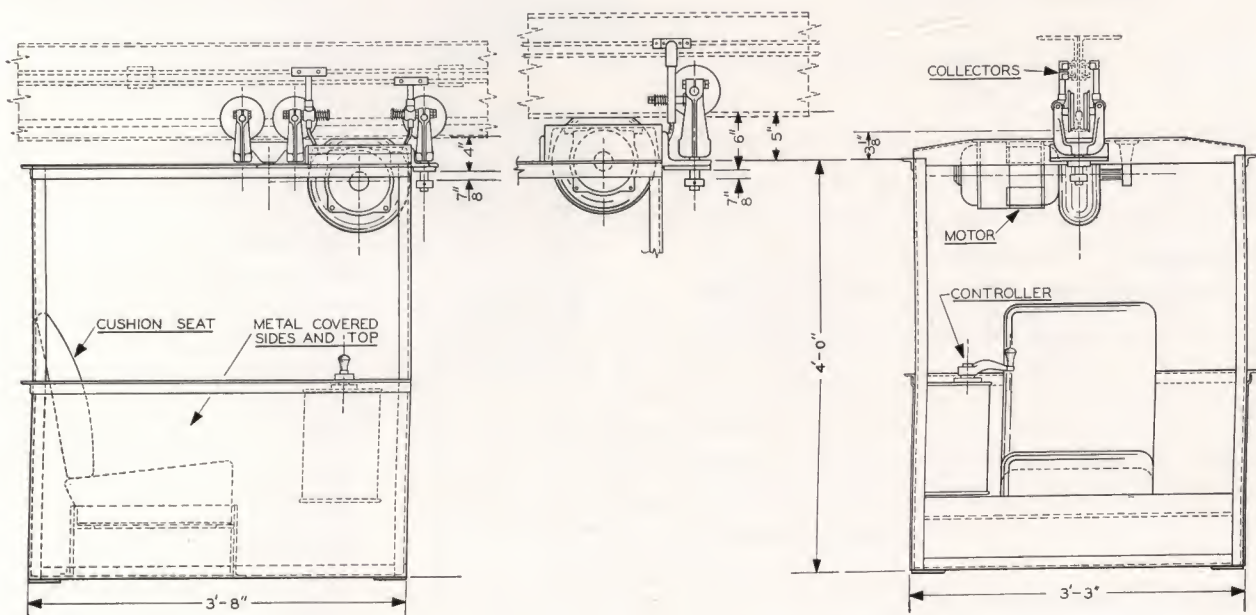
Cushion type seat is regularly furnished allowing ample space for drum controllers and for setting of contactor boxes, resistors and other electrical equipment.

Arrangement of controllers and accessories varies according to the particular requirement of each job.

Specifications for rubber wheel drive unit follow closely those listed on page 175 covering No. 2275 Mono-Tractor.

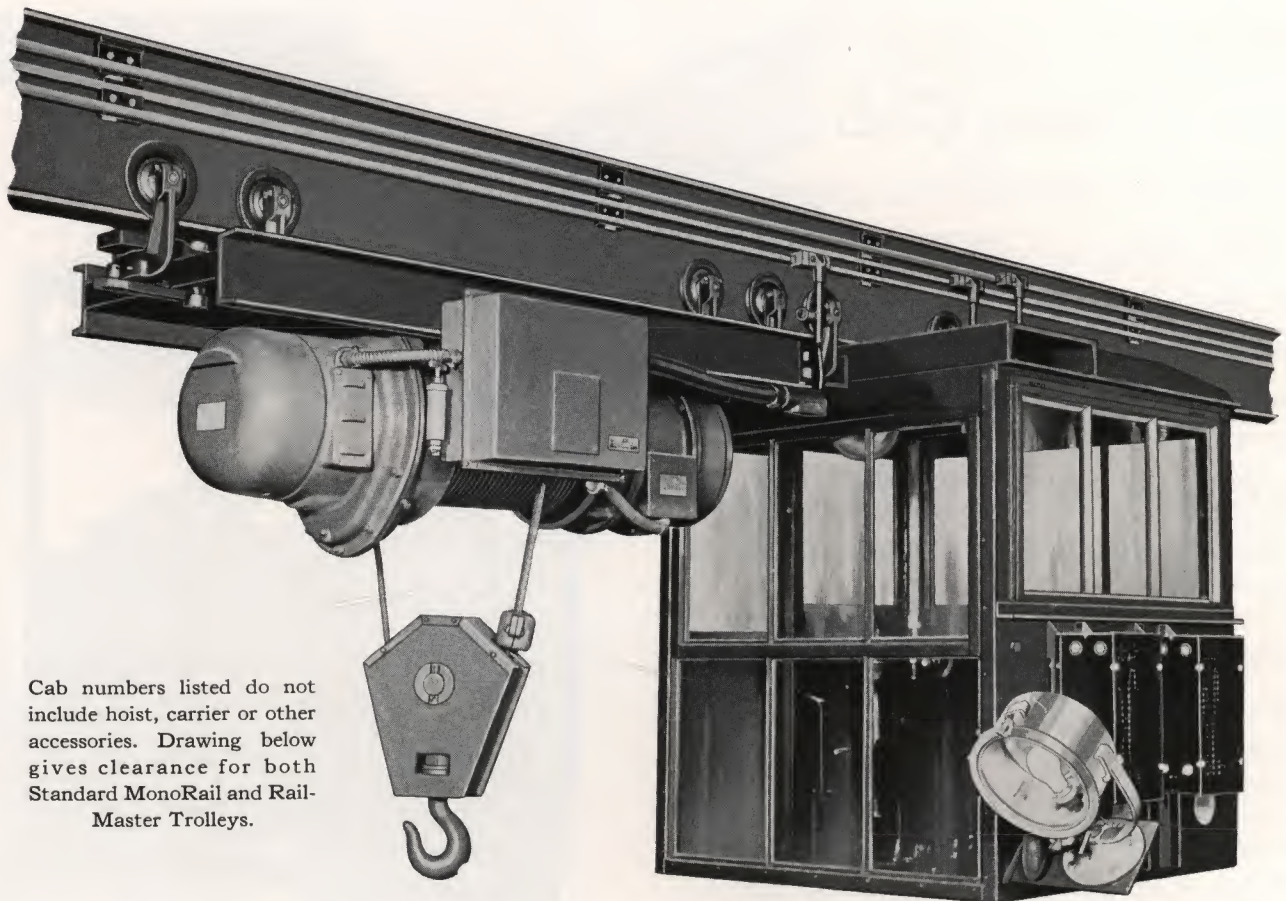


Drawing below includes dimensions and clearances for both Standard American MonoRail and RailMaster Trolleys.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





Cab numbers listed do not include hoist, carrier or other accessories. Drawing below gives clearance for both Standard MonoRail and RailMaster Trolleys.

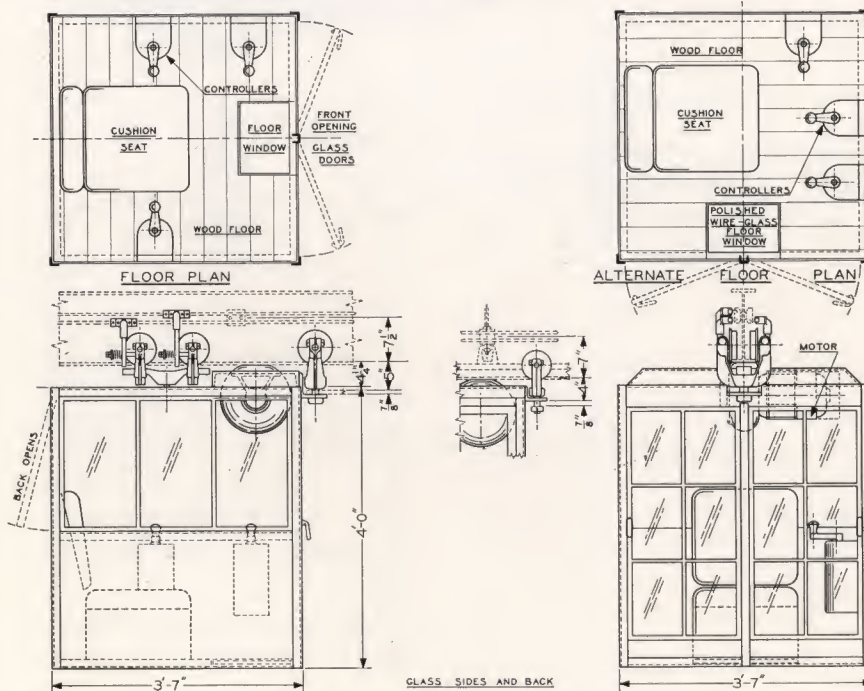
## MonoTractor Type Enclosed Cab

**No. 2291 For Standard MonoRail Track**

**No. MV-21  
For RailMaster Track**

This cab and drive unit includes all the advantages of compactness and MonoTractor drive as described on page 183 covering the open cab shown. It offers additional features of weather protection with visibility through the floor by means of a wire glass floor window. Heater can be installed as well as any other necessary accessory to meet special operating conditions.

Specifications for rubber wheel drive are listed on page 175 covering No. 2275 MonoTractor.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# Universal Chain Driven MonoTractor

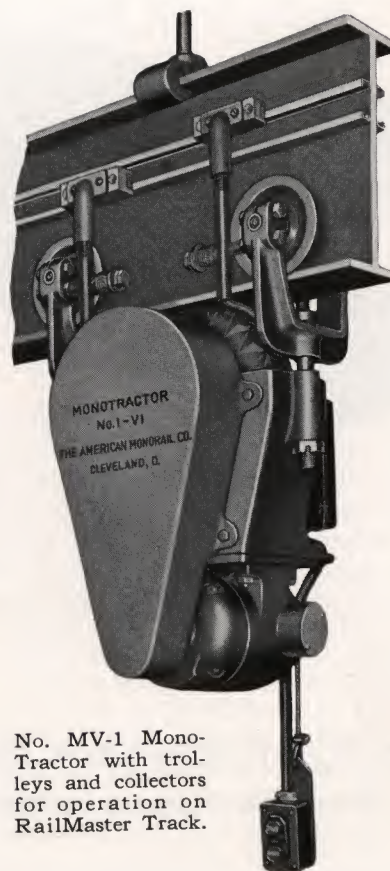
No. 2298 For Standard MonoRail Track

No. MV-1 For RailMaster Track

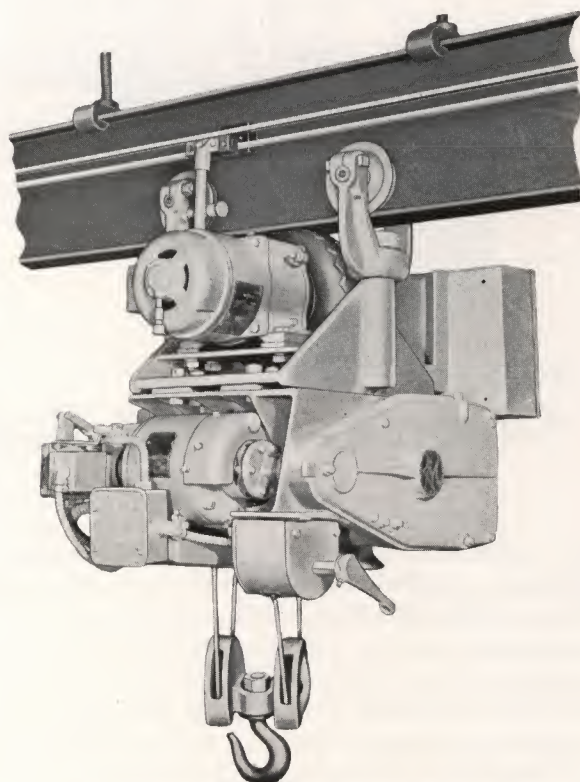
Made to Operate on any Flat Bottomed Rail

For occasion requiring transportation of carriers at less than 100 f.p.m. or more than 300 f.p.m. this special tractor can be easily geared to produce the exact speed. Any size motor may be installed. All gears run in an oil bath. Full antifriction bearings. The unit consists of a malleable cast frame for mounting of motor, control apparatus and rubber drive wheel. Malleable casting protects gears and chain drive. It can be furnished with multiple disc brake.

This tractor offers the additional advantage of compactness in overall dimensions for operation within extremely limited space. Special drawings and quotations will be submitted covering all applications of No. MV-1 MonoTractor.



No. MV-1 MonoTractor with trolleys and collectors for operation on RailMaster Track.



Combination MonoTractor and Hoist Unit for operation through Standard Turntable.

## Compact MonoTractor Hoist Unit

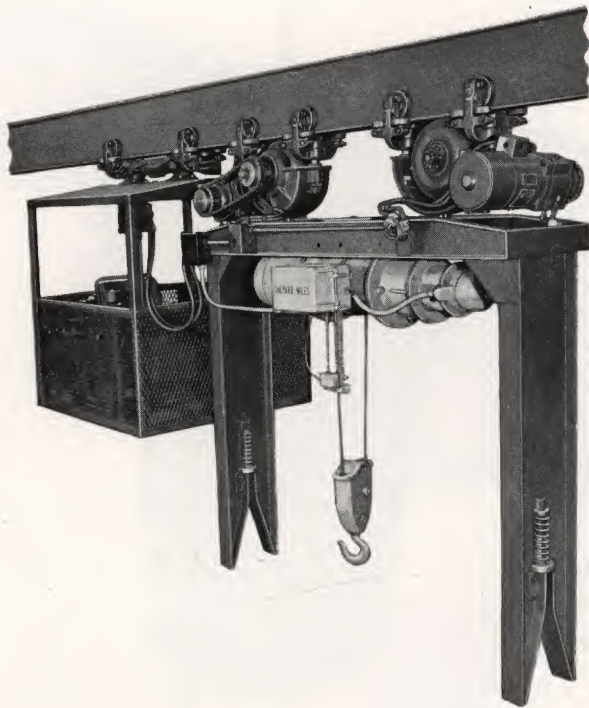
Gear Head MonoTractor Drive

In certain layouts requiring the use of a MonoTractor and Hoist Unit for operation along tracks crossing at right angles this combined mounting possible with No. MV-2 MonoTractor allows transfer from one track to another by means of a standard turntable.

Projects requiring such operation should be carefully checked for possible reversal of collectors causing change of polarity. Special polarity rectifiers are incorporated to accommodate such occasions.

Hoist capacity for this combined unit is limited to 1 ton on Standard MonoRail and 2½ tons on RailMaster Track.





## Special Armor Plate Carrier

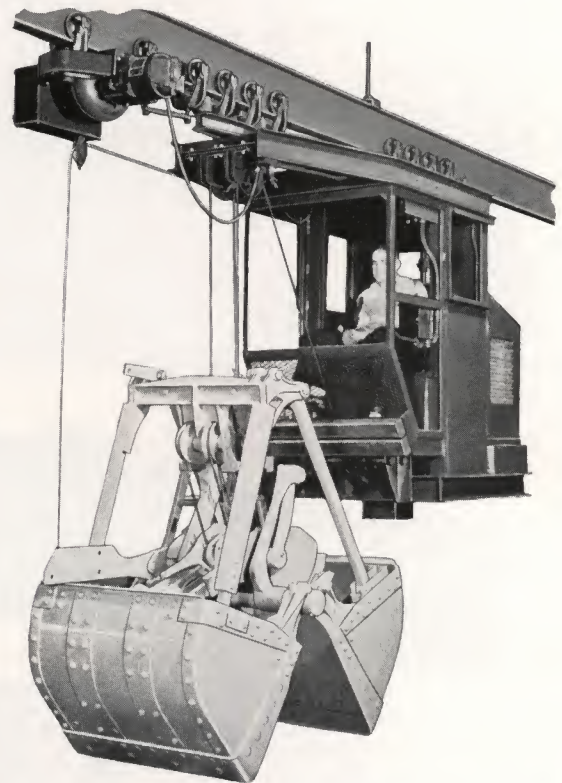
### Side Roller Trolleys Prevent Sway

Armor plate sections, such as used in ship construction, are picked up with the hoist and raised to fit snugly in the slots of the special frame. This prevents long loads from swinging in transit. Special trolley yokes equipped with side rollers, help to prevent sway as the carrier travels long lines of RailMaster track. Two heavy duty MonoTractors of chain drive type assure safe handling of 3-ton loads at speeds up to 450 feet per minute.

## Clam Shell Bucket Carrier

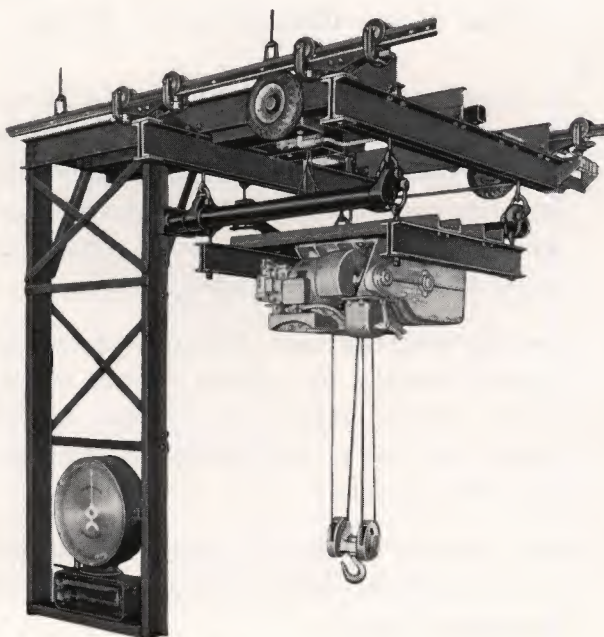
### With Motor Generator Unit

This carrier was designed to handle coal to lime kilns. It travels on its own power, developed by a gas-engine generator mounted in back of the operator's cab. The clam-shell bucket is raised and lowered by means of a winch operated from the gas engine. A wide variety of these bucket carriers have been developed for handling bulk materials.



## Crane-type Batch Scale Carrier

In order to prepare accurately proportioned cupola charges, a hoist is mounted on scale lever arms suspended from a crane-type frame. This permits carrier to pick up a charging bucket, travel by Mono-Tractor drive through material storage where charge is proportioned by weight and then deposited at the cupola. All push-button controls are mounted on the scale frame. Installation photo of this carrier is shown on page 218 along with other types of batch handling equipment.





# AUTOMATIC MONORAIL HANDLING

American MonoRail Engineers have developed a number of new and diversified systems of carrier control which are destined to lower the handling costs of many products. These controls offered exclusively by the American MonoRail Company are peculiarly adaptable to their compact multiple conductor system. Each type has not only been carefully tested, but is now in regular service on production jobs. The freedom from delays and trouble together with the attractive savings realized have not only justified their development for one particular job, but have given statistical proof that they will shrink handling costs in a wide range of industries.

The systems offered are of seven primary types:

- (1) Station Selectors
- (2) Selective Automatic Switching Devices
- (3) Electrical Block Systems
- (4) Automatic Trains
- (5) Automatic Loading Devices
- (6) Automatic Selective Discharge System
- (7) Cycle Control Panels

The above systems may be so combined that a MonoRail system can be provided to meet almost any requirement. By carrying the loads overhead and away from obstructions these automatic systems offer low cost handling not possible with floor transportation.

One system which has a cycle control panel and loads fabric rolls selectively from two points, delivers them selectively to eight different stations. The panel may be set for twenty trips and when the carrier has delivered the last roll, it returns to the loading point, stops and lights a signal light.

Another installation carries glass batch from a central mixer building up and over the tops of buildings to any selected one of five glass tanks where it deposits its load and returns to the mixer. Batch segregation is eliminated and transportation costs are only a fraction of the former figure.

Another system carries silk. A station selector enables any operator on the system to dispatch the carrier to any other station where it stops automatically.

Station selectors operate as described for the silk carrier above. The switch operating device may be set to throw switches along a line of travel so that the carrier arrives at the pre-determined destination. The electrical block system is used to prevent collisions where there are several carriers or trains operating automatically on one MonoRail line. Automatic trains may be arranged under certain conditions to operate safely in series without the use of the block system. Automatic loaders must be designed to fit the product. Cases, drums, rolls, and bulk are handled in this way. Batches may be made automatically to any prearranged proportion. Cycle control panels are designed and built to meet the various requirements of each job. They eliminate the necessity of close supervision by an operator, and carriers so operated are more accurate and efficient than a whole squad of truckers and there are no tired backs or hernias.

Automatic MonoRail handling is the newest development in the material handling field. It offers great possibilities for maintaining a flow of materials without an operator's attention and especially so where the destination varies for each load handled.

## MonoTractor Drive Extras

### ELECTRICAL

Magnetic brake  
Special collectors  
Additional collectors and control conductors  
Starting control other than standard  
Speed control and automatic acceleration.  
Single line reversing control  
Remote mounted controls  
Integral hoist and crane or MonoTractor controls  
Two speed motors  
Single phase; 25 and 30 cycle; 550 volt; two phase  
four wire and other currents of restricted use.

### MECHANICAL

Drawbars  
Special trolleys  
Weather and dust-proof construction  
Acid resisting construction  
Explosion-proof construction  
Rigid arm for control station or ropes  
Swinging arm for control station or ropes  
Off standard construction



# MONOTRACTOR CONTROL

The compact multiple conductor system used by The American MonoRail Company and the single wire reversing push button control developed by them permit the building of equipment to meet almost any control requirement. MonoTractor propelled units may be equipped with any of the following types of control:

## TYPES OF STARTING AND SPEED CONTROL

Across the Line Starting, A.C. and D.C.

- Pendant rope or radial handle
- Push button and magnetic contactor
- Push button direct switching

Starting Control

- Primary Resistance, A.C. only
  - Pendant rope or radial handle
  - Push button and magnetic contactor
  - Push button direct switching

Automatic Accelerating, A.C. and D.C.

- 2-Step push button
- 3-Step push button

Speed Control, A.C. and D.C.

- 4-Step without drift point, pendant rope or radial handle
- 4-Step with drift point, pendant rope or radial handle
- 6-Step without drift point, pendant rope or radial handle
- 6-Step with drift point, pendant rope or radial handle

## STANDARD CONTROL

MonoTractors are regularly equipped with push button across the line starters locally mounted, while MonoTractor operated cranes are supplied with single speed pendant rope control mounted on one end of the motor bracket.

## SPECIAL CONTROLS

For more delicate handling MonoTractors and cranes are equipped with *starting* control to produce easy, smooth acceleration. *Speed* control is furnished where it may be necessary to hold the travel speed down to less than the normal rated speed of the unit. Reduced speeds down to 60% of normal may be maintained indefinitely without "jogging" or "inching." These special controls, together with remotely mounted controls described below, are supplied at moderate extra prices based upon their additional cost.

## REMOTE CONTROL

Standard controls are mounted locally upon each controlled unit. Often it is desirable or necessary to mount crane control remotely upon a traveling unit, like a MonoTractor, or to mount MonoTractor control integrally with crane control on the crane. Where only

one control is remotely mounted, it is accomplished at little extra expense without additional conductors above the four furnished as standard equipment on crane bridges. Direct current requires two additional collectors and some additional wiring. Alternating current requires one additional collector and American MonoRail single wire control with additional wiring. With either A.C. or D.C. current cranes must be ordered with push button for remotely mounted control.

When additional units, such as hoists and grabs, are to be controlled from stations remotely mounted on a crane, each such unit should be ordered with push button control. Each unit will require an additional conductor on the crane bridge, a collector and one of the new single wire reversing control units. The use of drum type reversing controller remotely mounted involves many more conductors, but may sometimes be accomplished to meet many conditions where switches and crane interlocks are not involved. Primary resistance, A.C. accelerating starting control does not require additional conductors.

Standard American MonoRail cranes have four conductors. When alternating current is used, three of these conductors are used for power and one is available for remote control purposes. If the current is direct, two power conductors are required and two conductors are available for remote control purposes. Cranes may be furnished with six conductors at a nominal additional cost, where there are no interlocks involved. Even with interlocks it is often possible to add conductors bracketed from the bridge to meet additional remote control requirements. When a traveling unit on a MonoRail is to run onto a crane, provision must be made to either carry the conductors throughout the system or to arrange for a "pick-up" for the collectors when they approach the crane from the MonoRail system.

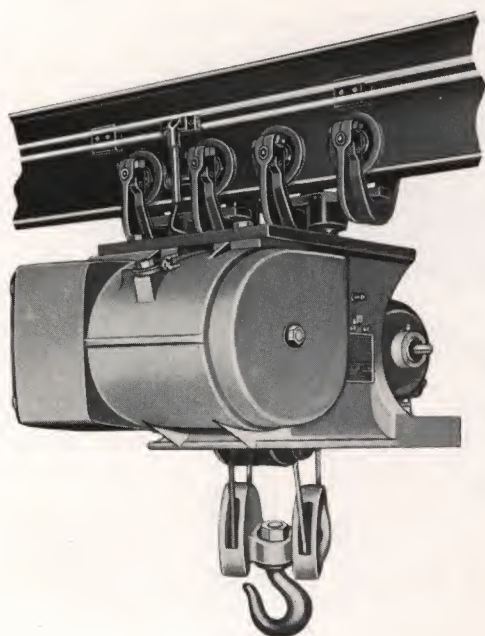
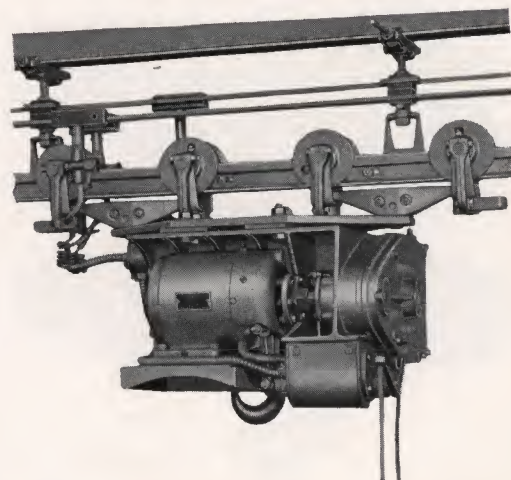
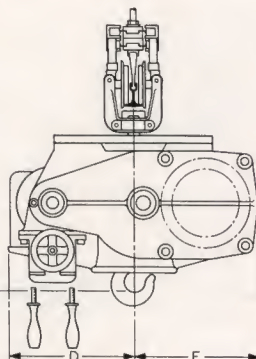
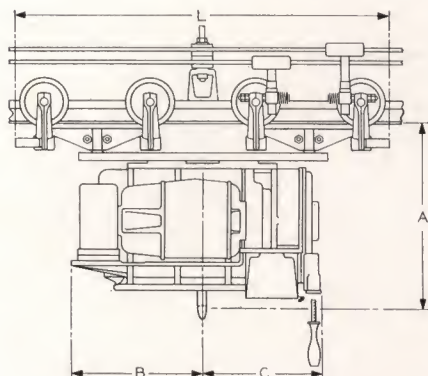
It is occasionally desirable to release one conductor throughout a system for control purposes or to save the expense of the conductor where a system is extensive. This may be accomplished by feeding the current through an insulating transformer and grounding one phase.

There are actually thousands of different combinations involving different kinds of current, types of control, and groups of units used in connection with MonoRail systems. American MonoRail engineers will gladly offer suggestions involving matters of control required in connection with Overhead Handling Equipment. They should be consulted in all cases involving the use of starting, speed, or remote control and particularly where disc brakes are involved in the units to be controlled.

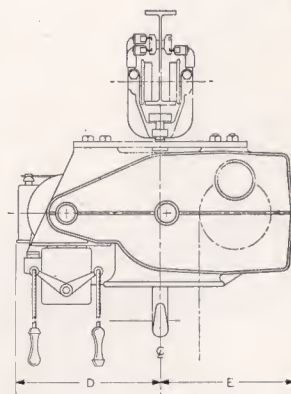
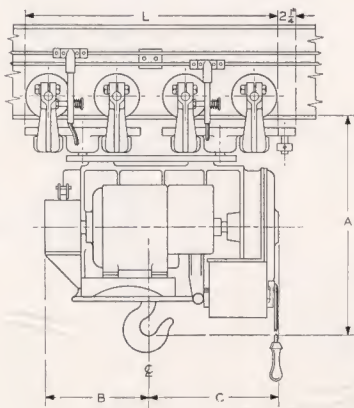
The items listed at the bottom of page 187 are not furnished as regular and standard equipment with American MonoRail, but may be supplied for a reasonable cost in connection with MonoTractor driven equipment.



# Robbins & Myers Electric Hoists



Illustrations on this and the following pages show electric hoists mounted on American MonoRail Standard and RailMaster Trolleys. Data given in connection with each hoist is for estimating purposes only. Specific information and blue prints will be furnished for working drawings.

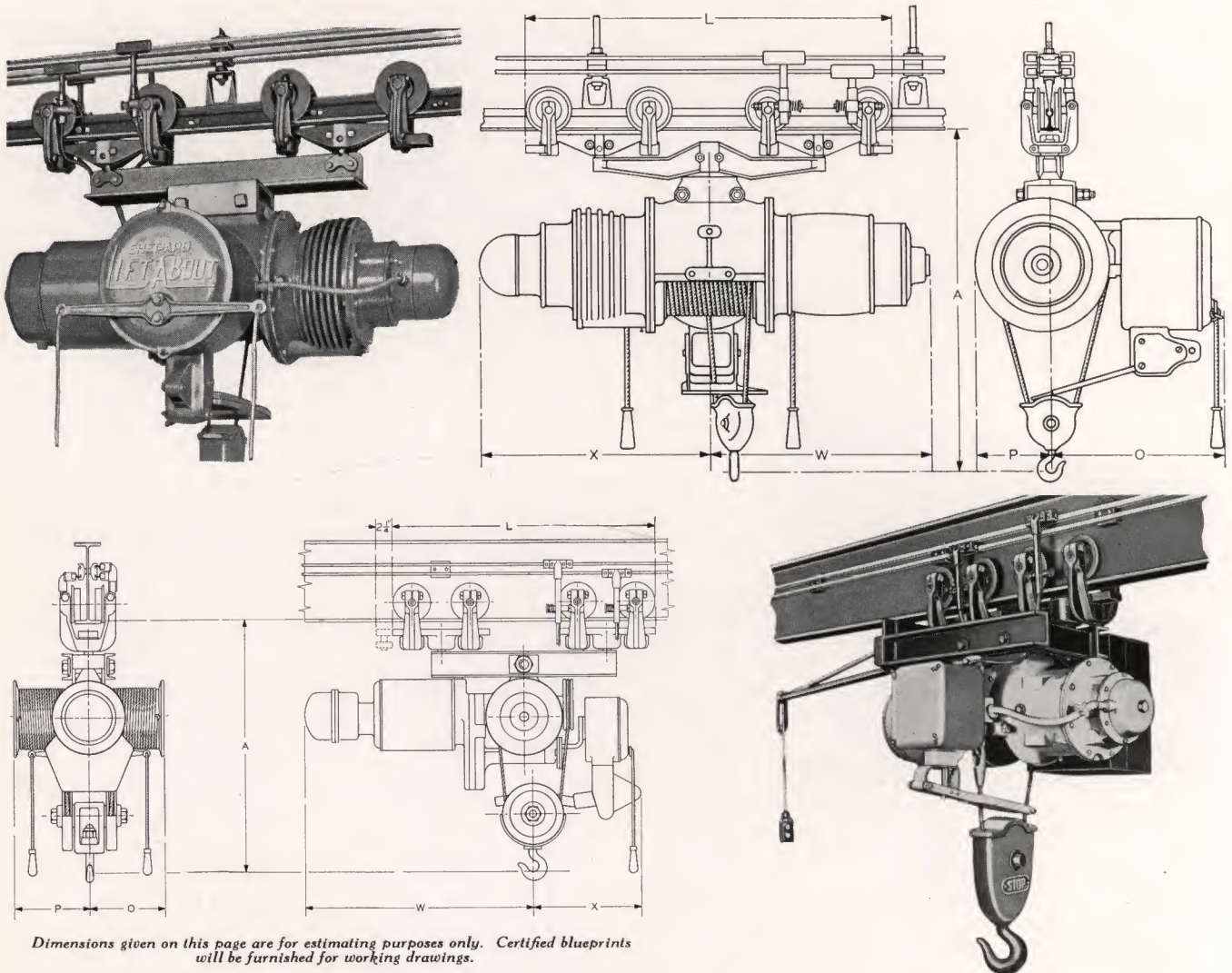


Track	Frame	Capacity	H. P. of Motor	Lifting Speed	Lift in Feet	Cable		Head Room	C		B	Side Clearance	Weight	Trolleys				
						Parts	Size		Front of Hook	Rear of Hook	Required			Cat. No.	Length	Weight	Adapter or Load Bar	
				A. C.														
No. 401 Rail	S $\frac{1}{4}$	250	$\frac{1}{2}$	40	25	1	$\frac{3}{16}$	26	$18\frac{5}{16}$	$9\frac{3}{16}$	$12\frac{1}{2}$	243	2	150	$27\frac{1}{2}$	28	BY R&M	
	S $\frac{3}{4}$	500	$\frac{1}{2}$	20	25	2	$\frac{3}{16}$	13	$18\frac{5}{16}$	$9\frac{3}{16}$	$12\frac{1}{2}$	240	2	157	$27\frac{1}{2}$	32	BY R&M	
	F $\frac{1}{2}$ D	1000	1	20	25	2	$\frac{1}{4}$	$22\frac{1}{2}$	$13\frac{1}{2}$	$12\frac{1}{2}$	$13\frac{1}{2}$	440	2	179	21	38	BY R&M	
	F $\frac{1}{2}$ L	1000	$1\frac{1}{4}$	30	25	2	$\frac{1}{4}$	$22\frac{1}{2}$	$13\frac{1}{2}$	$12\frac{1}{2}$	$13\frac{1}{2}$	440	2	179	21	38	BY R&M	
	F $\frac{1}{2}$	2000	$1\frac{1}{2}$	20	20	4	$\frac{1}{4}$	$22\frac{1}{2}$	$13\frac{1}{2}$	$12\frac{1}{2}$	$13\frac{1}{2}$	440	2	146	27	56	BY R&M	
	F1	1000	2	54	40	2	$\frac{1}{4}$	$25\frac{1}{2}$	19	16	16	620	2	146	$31\frac{1}{2}$	56	BY R&M	
	F1	2000	2	27	20	4	$\frac{1}{4}$	$25\frac{1}{2}$	19	16	16	620	2	162	$36\frac{1}{2}$	60	BY R&M	
	F1	2000	3	42	40	2	$\frac{1}{4}$	$25\frac{1}{2}$	19	16	16	620	2	162	$36\frac{1}{2}$	60	BY R&M	
	F1	3000	3	27	20	4	$\frac{1}{4}$	$21\frac{1}{2}$	19	16	16	620	2	180	$40\frac{1}{2}$	84	BY R&M	
	F1	4000	3	21	20	4	$\frac{5}{16}$	$21\frac{1}{2}$	19	16	16	620	2	180	$40\frac{1}{2}$	84	BY R&M	
No. MD1 Rail	F1	2000	2	27	20	4	$\frac{1}{4}$	$26\frac{1}{2}$	13	$19\frac{1}{4}$	16	620	2	MA-5	$25\frac{1}{2}$	95	Adapter Plate by R&M Nickel Steel Swivel Studs by A. M. Co. Knuckle Swivels Required on Hoists 3 ton capacity and over.	
	F1	2000	3	42	40	2	$\frac{1}{4}$	$26\frac{1}{2}$	13	$19\frac{1}{4}$	16	620	2	MA-5	$25\frac{1}{2}$	95		
	F1	3000	3	27	20	4	$\frac{1}{4}$	$22\frac{1}{2}$	13	$19\frac{1}{4}$	16	620	2	MA-5	$25\frac{1}{2}$	95		
	F1	4000	3	21	20	4	$\frac{5}{16}$	$22\frac{1}{2}$	13	$19\frac{1}{4}$	16	620	2	MA-5	$25\frac{1}{2}$	95		
	F3	4000	6	40	40	4	$\frac{3}{8}$	32	$17\frac{1}{2}$	22	21	1350	2	MA-12	33	360		
	F3	6000	6	24	20	4	$\frac{3}{8}$	29	$17\frac{1}{2}$	22	21	1350	2	MA-12	33	360		
	F3	8000	6	20	20	4	$\frac{3}{8}$	29	$17\frac{1}{2}$	22	21	1350	2	MA-12	33	360		
	F3	10000	6	16	25	4	$\frac{3}{8}$	29	$17\frac{1}{2}$	22	21	1450	2	MA-12	33	360		
	F5	10000	$12\frac{1}{2}$	26	20	4	$\frac{7}{16}$	45	$21\frac{1}{2}$	34	$28\frac{1}{2}$	2050	2	MA-22	72	450		

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Shepard Niles Electric Hoists

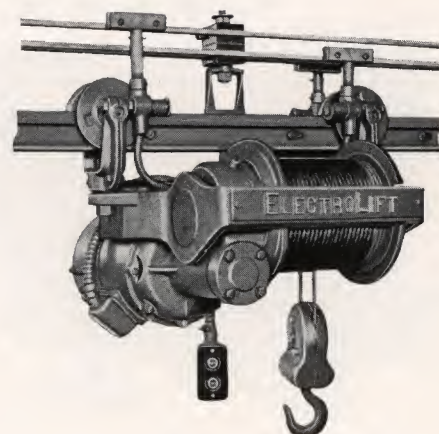
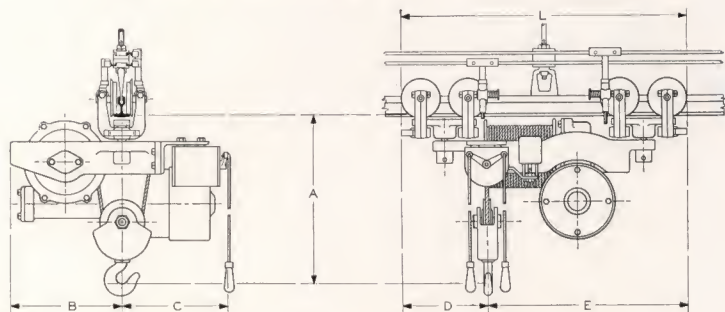


Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

Track	Class	Capacity	Form	H.P. Motor		Lift Speed		Lift in Feet	Cable		Head Room	W				X	O		Weight of Hoist	Trolleys				
				DC	AC 60C	DC	AC 60C		Part	Size		Single Speed		Variable Speed			Single	Variable		Required	Cat. No.	L	Weight	Adapter or Load Bar
												DC	AC 60C	DC	AC 60C									
No. 401 Standard	G	1000	1-R	3/4	1 1/4	20	28	18			26 3/8	18	18 1/2	21 3/4	24 1/4	19 1/2	12 1/2	400	1	162	17	47	A228	
	H	500	1-R	1 1/2	2 1/2	53	65	18			29 1/8	21 3/4	20 3/4	21 3/4	24 1/4	21 1/4	13 1/2	560	1	165	17	41	A228	
	H	2000	1-R	1 1/2	2 1/2	21	30	18			31 1/8	21 3/4	20 3/4	21 3/4	24 1/4	21 1/4	13 1/2	560	1	171	42	95	A229	
	I	4000	1-R	3	4	21	26	18			37 3/4	23 1/2	22 3/4	23 1/2	26	25 1/4	15	21 1/2	730	1	181	51	118	A229
	G	500	1-S	3/4	1 1/4	39	50	27			31 5/8	20	20 1/2	21 3/4	24 1/4	21 1/2	14 1/2	440	1	165	17	41	A228	
	H	1000	1-S	1 1/2	2 1/2	40	56	28			35 1/8	24 1/4	23 1/2	24 1/4	26 3/4	23 3/4	15 1/2	19 1/2	610	1	162	17	47	A228
	I	1000	1-S	3	4	58	60	33			41 5/8	26 1/2	25 3/4	26 1/2	29	28 1/4	16 1/2	21 1/2	800	1	162	17	47	A228
	I	3000	1-S	3	4	28	32	33			43 3/4	26 1/2	25 3/4	26 1/2	29	28 1/4	16 1/2	21 1/2	800	1	181	51	118	A229
	H	500	23-S	1 1/2	2 1/2	53	65	16			15 3/4	23 1/2	23 1/2	26 3/4	26 3/4	10 3/8	23 3/4	26 3/4	680	2	150	32 1/8	24	A193
	H	2000	23-S	1 1/2	2 1/2	21	30	16			15 3/4	23 1/2	23 1/2	26 3/4	26 3/4	10 3/8	23 3/4	26 3/4	680	1	157	37 3/8	32	A193-2
I	2000	23-S	3	4	40	50	17			18 1/4	26 3/4	26 3/4	30 1/4	30 1/4	12 7/8	28 1/4	29	900	1	162	43 3/8	32	A193-2	
I	4000	23-S	3	4	21	26	17			20 3/4	26 3/4	26 3/4	30 1/4	30 1/4	12 7/8	28 1/4	29	900	1	162	61 1/8	112	A193-2	
No. MD-1 RailMaster	I	3000	1-R	3	4	28	32	18			39 3/4	23 1/2	22 3/4	23 1/2	26	25 1/4	15	21 1/2	730	2	MA-4	33	132	MH24-B
	H	2000	1-S	1 1/2	2 1/2	21	30	28			39	24 1/4	23 1/2	24 1/4	26 3/4	23 3/4	19 1/2	15 1/2	610	2	MA-4	33	132	MH24-B
	I	4000	1-S	3	4	21	26	33			45 3/4	26 1/2	25 3/4	26 1/2	29	28 1/4	21 1/2	16 1/2	800	2	MA-4	33	132	MA24-B
	A	6000	1	4 1/2	7 1/2	18	28	16	2	7/16	46 5/8	25	21	25	25	24	16	22	1125	2	MA-12	33	210	MH28-BK
	B	8000	1	10	15	29	40	22	2	1/2	57 3/4	30	30	30	30	33 1/2	27 1/2	27 1/2	2350	2	MA-12	33	210	MH28-BK
	B	10000	1	10	15	23	33	18	2	9/16	57 3/4	30	30	30	30	33 1/2	27 1/2	27 1/2	2350	2	MA-12	33	210	MH28-BK
	B	6000	3	10	15	36	49	45	2	7/16	58 3/8	28 1/4	24 1/4	34 1/4	34 1/4	37 3/4	27 1/2	27 1/2	2700	2	MA-12	33	210	MH28-BK
	A	8000	3	4 1/2	7 1/2	13	21	20	4	3/8	59 9/16	28 1/4	24 1/4	28 1/4	28 1/4	27 1/4	16	22	1325	2	MA-12	33	210	MH28-BK
	A	10000	3	4 1/2	7 1/2	10	14	20	4	3/8	59 9/16	28 1/4	24 1/4	28 1/4	28 1/4	27 1/4	16	22	1325	2	MA-12	33	210	MH28-BK

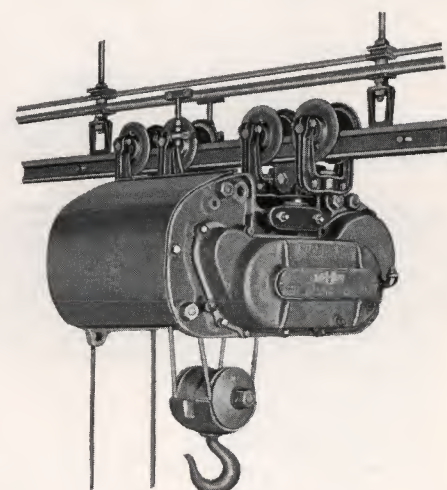
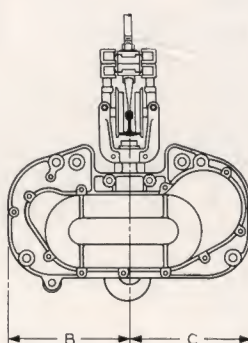
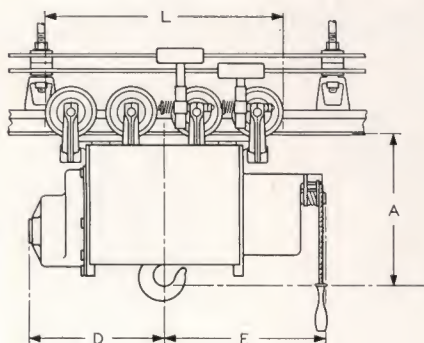


## Electrolift Hoists



Track	Capacity	Frame Size	H. P. of Motor	Lifting Speed	Lift in Feet	Cable Parts	A	D	C		E	Weight of Hoist	Trolleys				
							Head Room	Front of Hook	AC	DC	Rear of Hook		Required	Cat. No.	Length	Weight	Adapter or Load Bar
No. 401 Rail	250	M	1 1/2	30	15	2	14	6 1/4	10	10	15 1/4	150	2	150	21 1/2	24	A193, A193-2
	500	A	1 1/2	60	15	1	12 3/4	4	13	14	16 1/4	200	2	150	20 1/4	24	A193, A193-2
	1000	A	3/4	15	15	2	15 3/4	7 1/2	13	13	18 3/4	225	2	157	26 1/4	28	A193, A193-2
	2000	B	3	25	20	2	21 1/4	8 1/2	14	18	30	475	2	162	38 1/2	53	A193, A193-2
	3000	B	4	25	20	2	21 3/4	14	14	18	40 1/2	500	2	180	54 1/2	112	A193, A193-2
	4000	B	4	20	10	4	25 3/4	15	14	18	46	550	2	180	61	141	A193, A193-2
No. MD1 Rail	2000	A	1 1/2	15	10	4	19 1/2	6	13	13	20 1/4	325	2	MA-5	26 1/4	70	MA21-A
	4000	B	4	20	10	4	23 3/4	7 1/2	14	18	28	550	2	MA-5	35 1/2	120	MA21-A
	6000	C	6 1/2	20	20	2	31 1/4	10 1/2	18	22	32 3/4	850	2	MA-12	43 1/4	120	MA21-AK
	10000	C	6 1/2	12	10	4	37 1/2	14 1/2	18	22	42 1/4	1000	1	MA-12	57	375	MA21-AK

## Lo-Hed Electric Hoists

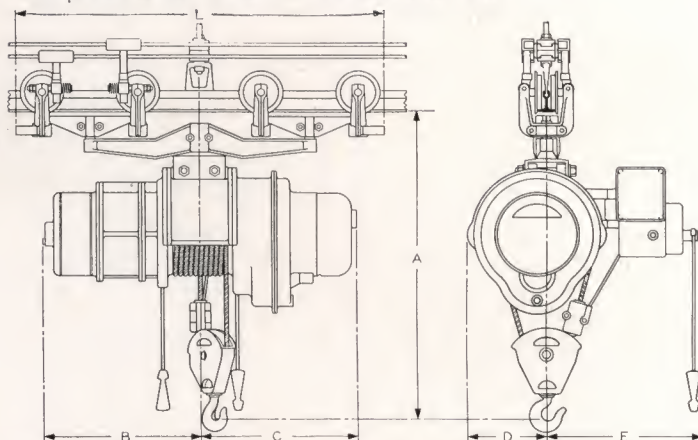
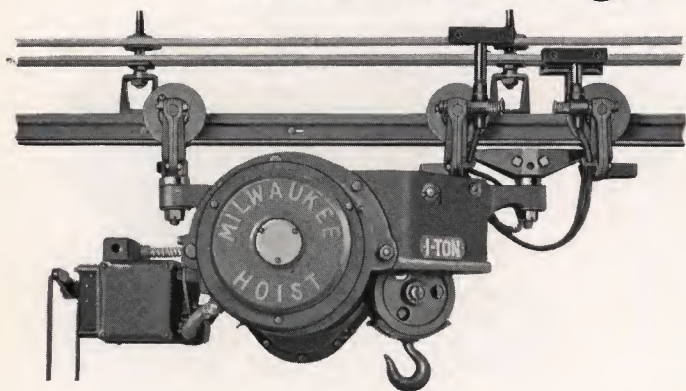


Track	Class	Capacity	H P. of Motor		Lifting Speed		Lift in Feet	Cable Parts	A	D	E	BC	Weight of Hoist	Trolleys				
			DC	AC	DC	AC			Head Room	Rear of Hook	Front of Hook	Side Clearance		Required	Cat. No.	Length	Weight	Adapter or Load Bar
No. 401 Rail	L 1/4	500	3/4	3/4	40-80	40	20	1	20 7/8	9	8 1/2	10 1/2	195	2	150	24	38	O-823-B2
	A 1/2 H.S.	1000	1.6	1.6	40-80	40	20	4	15	13	16 1/4	12	360	2	157	21	25	A-113 2 1/2" x 18" Stud
	A1	2000	1.6	1.6	20-40	20	20	4	15 1/4	13	16 1/4	12	360	2	146	27	70	A-113 2 1/2" x 18" Stud
	B1 1/2	3000				25	20	4	18 1/2	19 5/8	21 5/8	16 5/8	860	2	180	51	135	H-933
	B2	4000	4	4	18-36	20	20	4	18 1/2	19 5/8	21 5/8	20 7/8	900	2	180	51	135	H-933
No. MD1 Rail	H2	4000			25	20	4	4	24 1/4	22 1/2	24 1/2	19	1500	2	MA-5	26	125	MH23-D
	H3	6000			15	20	4	4	24 1/4	22 1/2	24 1/2	19	1550	2	MA-12	35	225	MH23-DK
	H4	8000	5 1/2	5 1/2	15-30	15	20	4	25 1/4	22 1/2	24 1/2	23 1/8	1550	2	MA-12	35	225	MH23-DK
	H5	10000	5 1/2	5 1/2	12-24	12	15	6	35 1/4	22 1/2	24 1/2	23 1/8	1600	2	MA-12	35	225	MH23-DK

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



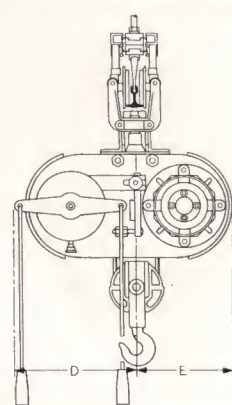
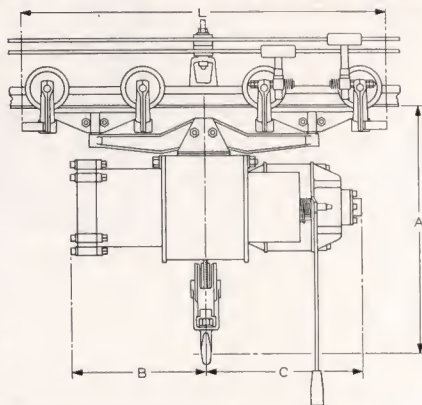
# Harnischfeger Electric Hoists



Track	Frame	Capacity	H.P. of Motor			Lift'g Speed			Lift in Feet	Cable		Head Room	B—Single Speed			B—Var. Speed			C	E Side Clearance	Weight of Hoist	No. Req'd	Trolleys			
			DC	AC 60C	AC 25C	DC	AC 60C	AC 25C		Parts	Size		DC	AC 60C	AC 25C	DC	AC 60C	AC 25C					Cat. No.	W	Weight	Load Bar
No. 401 Rail	S-46	250																	12	7 3/8	110	1	165	17	39	A-227
	S-46	500																	12	7 3/8	110	1	165	17	39	A-227
	R-1/2	1000	1	1 1/2	1	28	35	28	18	2	1/4	24 3/8	13 1/4	15 1/4	18 1/4	18	20	17 3/4	16 3/4	400	1	180	21	49	A-227	
	R-1	2000	2	3	2	28	32	25	18	2	5/16	37 9/16	18 1/4	17 1/4	18 1/4	18 1/4	20 1/4	18 3/4	17 3/4	505	1	171	42	95	A-228	
	LR-1	2000	2	3	2	28	32	25	18	2	5/16	37 9/16	21 1/2	20 1/2	21 1/2	21 1/2	23 1/2	22	17 3/4	600	1	171	42	95	A-228	
	LR-1/2	2000	1	1 1/2	1	14	17	14	18	4	5/16	41 5/16	20 1/4	17 1/4	20 3/4	21	23	20 3/4	16 3/4	515	1	171	42	95	A-228	
HR-2	4000	4	4	5	23	20	25	15	4	5/16	24 1/4	26	22 1/2	25	20 1/4	21	13	24 1/2	1040	1	180	65 1/2	116	A-193		
No. MD1 Rail	R-3	6000	5	7 1/2	5	25	35	28	18	2	1/16	46 1/4							20 1/2	905	2	MA-12	33	210	MH28-BK	
	R-5	10000	10	15	10	24	35	22	20	2	1/16	52 1/8							24 1/2	1725	2	MA-12	33	210	MH28-BK	
	LR-1	4000	2	3	2	28	32	25	36	4	1/4	48 3/4	21 1/2	18 1/2	20 1/2	21 1/2	21 1/2	23 1/2	17 3/4	660	2	MA-4	33	130	MH24-B	
	LR-5	8000	10	15	10	28	35	22	40	2	1/2	52 7/8							24 1/2	1900	2	MA-12	33	210	MH28-BK	
	HR-3	6000	5	7 1/2	5	25	35	28	15	4	5/16	23 1/4							28 1/2	1040	2	MA-12	49	170	MH21-AK	
	HR-5	10000	10	15	10	24	35	22	15	4	1/16	30 1/2							35	1950	1	MA-12	66	266	MH21-AK	



# Euclid Electric Hoists

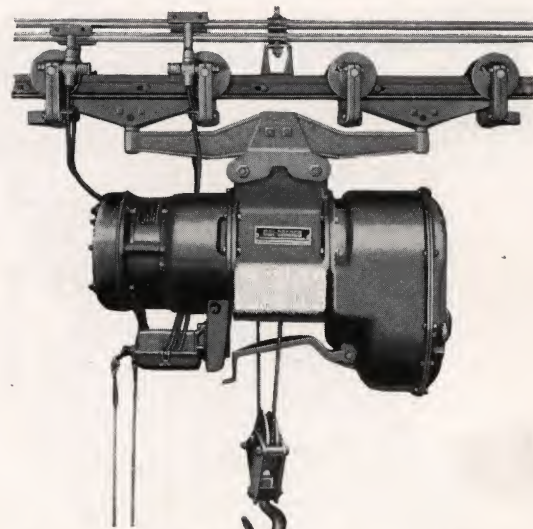
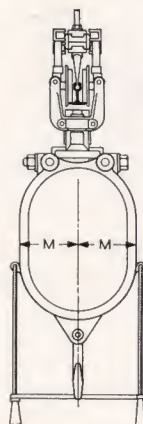
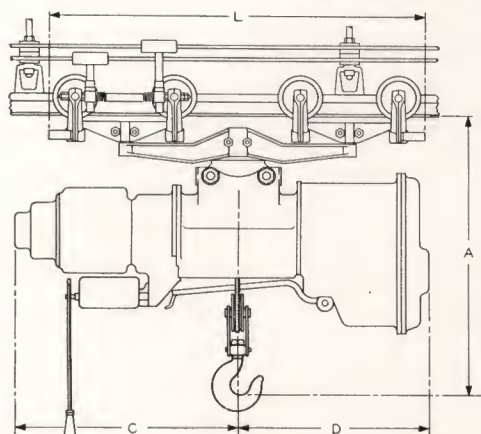


Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

Track	Type and Number	Capacity	Lift in Feet	Lifting Speed	A	B	C	Cable		Hoist Weight	D	Trolleys				
					Head Room	To Rear of Hook	To Front of Hook	Parts	Size		Max. Side Clearance	Required	Cat. No.	Length	Weight	Adapter or Load Bar
No. 401 Rail	11	1000	20	30	19 5/8	14	18	2	1/4	300	12 1/8	1	180	21	52	A-228
	11	2000	16	30	21 5/8	14	18	2	1/8	320	12 1/8	1	171	21	52	A-228
	12	3000	17	30	23 1/8	15 1/2	20	2	3/8	470	14	1	181	42	93	A-229
	12	4000	17	25	23 1/8	15 1/2	20	2	3/8	500	14	1	181	51	118	A-229
No. MD1 Rail	11	1000	20	30	24 1/8	14	18	2	1/4	300	12 1/8	2	MA-2	24	65	MH27-B
	11	2000	16	30	24 1/8	14	18	2	1/8	320	12 1/8	2	MA-4	24	125	MH27-B
	12	3000	17	30	25 1/8	15 1/2	20	2	3/8	470	14	2	MA-4	24	125	MH27-B
	12	4000	17	25	25 1/8	15 1/2	20	2	3/8	500	14	2	MA-4	24	125	MH27-B
	12	6000	20	15	32 1/4	20 1/2	24	4	3/8	680	14	2	MA-12	39	200	MH27-BK
	12	8000	17	15	32 1/4	20 1/2	24	4	3/8	680	14	2	MA-12	39	200	MH27-BK
	13	10000	24	15	43 1/4	26	38	4 R&L	16 1/2	1750	16 1/2	2	MA-12	39	200	MH27-BK



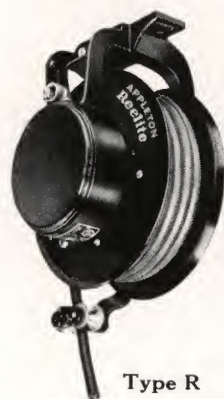
# Shaw-Box Electric Hoists



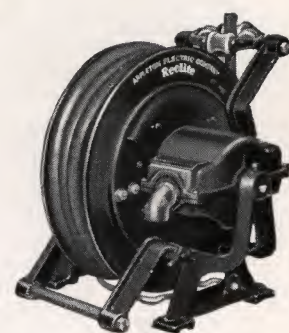
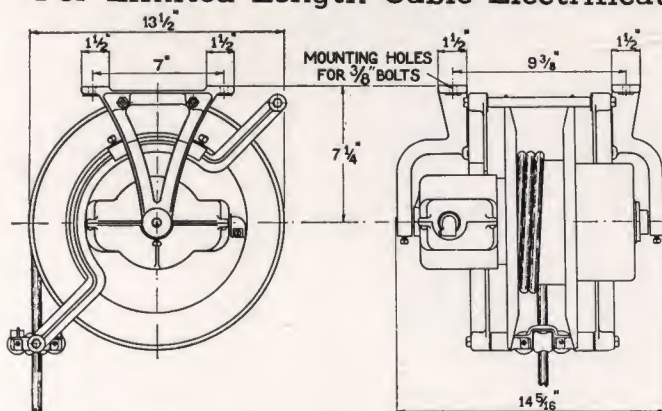
Type Rail	Frame	Capacity	H. P. of Motor	Lifting Speed			Lift in Feet	Cable		Head Room	A	C	D	Max Side Clearance	Weight Hoist	Trolleys				
				DC	AC 60C	AC 25C		Parts	Size							No. Required	Cat. No.	Length L	Weight	Load Bar
No. 401 Rail	M-1¼	500	1	42	38	35	18	4	3⁄16	14¾	12 1⁄8	7 7⁄8	18	440	2	150 157 142, 171	26 1⁄2	24	A193, A193-2	
	MSA ½	1000	2	50	50	18	18	4	1⁄4	14¾	12 1⁄8	7 7⁄8	18	440	2		26 1⁄2	28	A193, A193-2	
	M2A	4000	4	30	26	17	18	4	5⁄16	18 5⁄8	16 5⁄8	9 3⁄4	25 3⁄4	800	1		50	111	A193, A193-2	
	LL-S¾	1500	2		38		20	2	5⁄16	28¾	17¾	15 1⁄2	6 1⁄2	420	1	180	21	47	H877	
	LL-1	2000	2	29	36	29	20	2	5⁄16	30¾	20	17¾	7 1⁄2	420	1	171	33	108	H877	
	LR-1 ½	3000	2	30	26	26	20	2	5⁄16	33	20	17¾	7 1⁄2	710	1	181	51	133	H877	
No. MD1 Rail	M-3	6000	6	30	26	17	24	4	5⁄16	22	20 5⁄8	13 3⁄8	28 1⁄2	1420	2	MA-12 MA-12, MA-22 MA-4	49	170	MH21-AK	
	M-5	10000	6	18	18	11	18	6	5⁄16	28¾	20¾	13¼	28¼	1740	1		58	266	MH21-AK	
	LR-2	4000	4	30	26	26	18	2	5⁄8	37 5⁄8	20	17¼	7 1⁄2	800	2		33	132	MH24-B	
	LR-4	8000	6	20	18	18	12	3	7⁄16	55¾	19¾	19¼	8 3⁄8	1295	2	MA-12	33	210	MH28-BK	

## Automatic Take-Up Cable Reel

For Limited Length Cable Electrification



Type R



Type A-4

TYPE "A-4"—Furnished With Cable Outlet* Weight of Reel Only—35 Pounds					
	No. of Conductors	Size of Cable			
		No. 18	No. 16	No. 14	No. 12
Maximum Capacity in Feet of Various Sizes of Cable	2	100'	90'	55'	35'
	3	90'	75'	45'	30'
	4	75'	60'	35'	30'

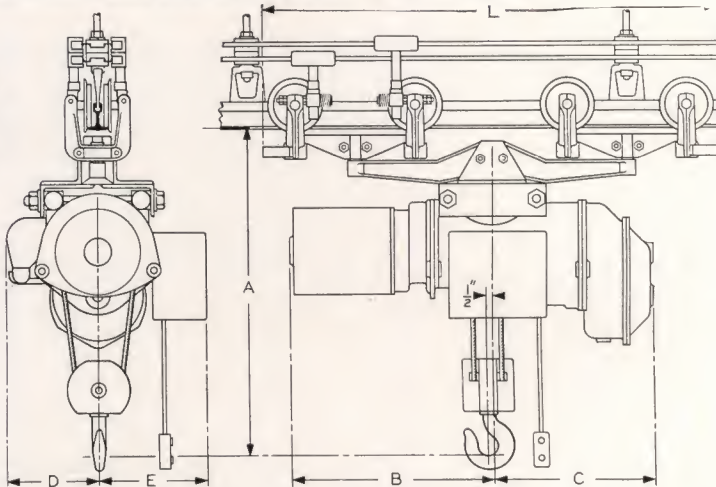
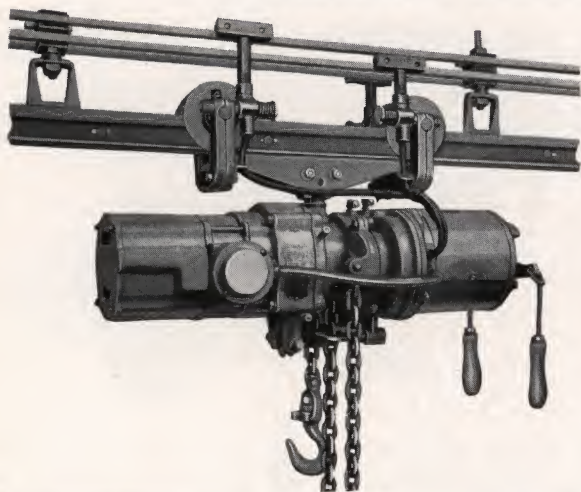
Either of the two Reelites shown above can be mounted in any position for automatic take-up and pay-out of cable electrification. Type "A-4" is a heavy duty reel with standard capacity as listed in the accompanying table. Type "R" is a small, sturdy wheel for short lengths of light gauge cord, its capacity being limited to 25 feet—three conductor cable, its weight 25 pounds.

\*No. 1 Roller Type. No. 2 Swivel Type. No. 3 Large Roller Type.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

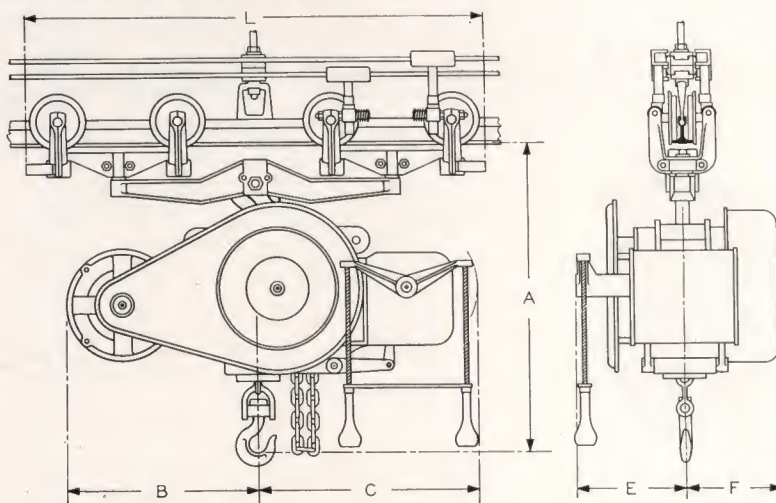
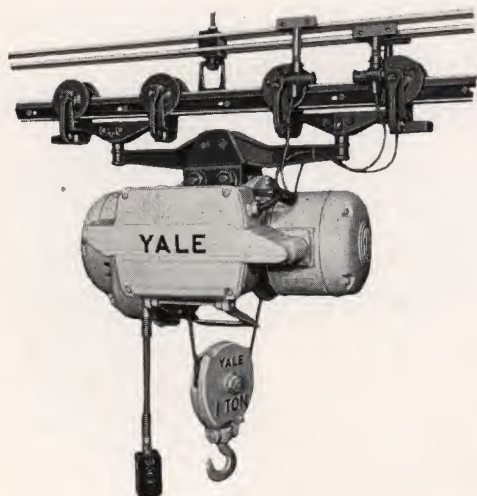


## Chisolm-Moore Electric Hoist



Track	Class and Frame	Capacity	H. P. of Motor	Lifting Speed	Lift in Feet	Cable		A	B	C	E	Hoist Weight	Trolleys				
						Parts	Size						Required	Cat. No.	Length	Weight	Adapter or Load Bar
No. 401 Rail	H-1/2	500	1	40	40	1	1/4	32 1/8	12 3/8	15	6 1/8	325	1	165	17	24	H-878
	H-1/2	2000	1	12	10	4	1/4	34 3/4	12 3/8	15	9	375	1	171	42	75	H-878
	H-1L	1000	1 1/4	28	23	2	5/16	34 3/8	14 3/8	18 3/4	15 1/2	590	1	162	17	30	H-878
	H-1L	4000	2 1/2	14	14	4	5/16	39 1/2	14 3/8	20 1/2	17 1/2	785	1	181	51	100	H-878
No. MD-1 Rail	H-1S	3000	2 1/2	20	15	2	5/16	40	14 5/8	20 1/2	15 1/2	610	2	MA-4	33	112	MH22-A
	H-1 1/2L	6000	5	20	20	4	3/8	51 1/4	16 3/4	30 1/2	19	1250	2	MA-12	33	195	MH22-AK
	H-2L	8000	7	20	23	4	3/8	55 1/4	21	38	24	1250	2	MA-12	33	195	MH22-AK
	H-2S	10000	6	13	15	4	1/2	55 1/4	21	38	24	1900	2	MA-12	33	195	MH22-AK

## Yale Electric Hoist

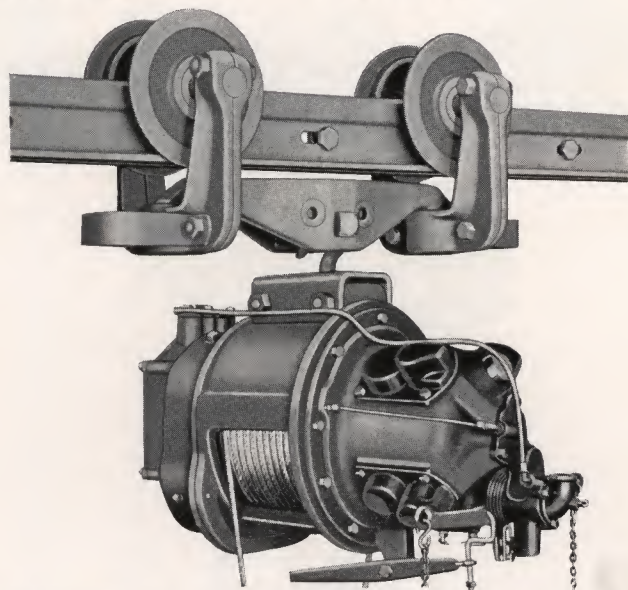
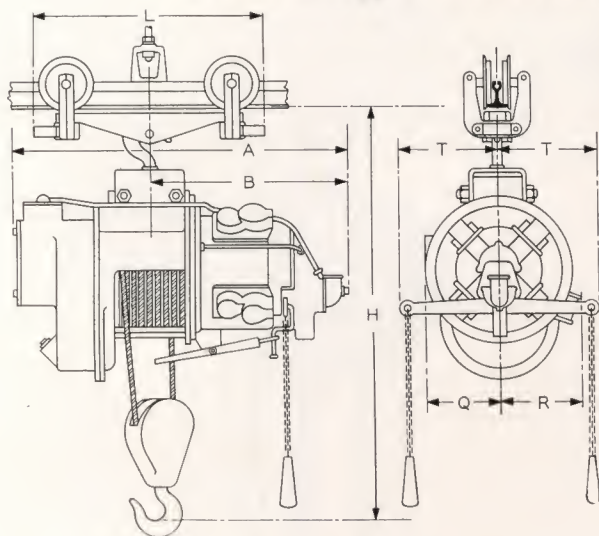


Track	Capacity	H. P. of Motor	Lifting Speed—A.C.	Cable		Lift in Feet	A	B	C	E	Weight of Hoist	Trolleys				
				Parts	Size							Required	Cat. No.	Length	Weight	Adapter or Load Bar
No. 401 Rail	500	3/4	36	2	3/16	19	27 5/8	15 1/2	16 1/4	11 1/4	280	1	165	17	39	A-227
	1000	1 1/2	36	2	1/4	19	27 5/8	16 3/4	11 1/4	11 1/4	290	1	162	17	45	A-227
	2000	2	30	2	5/16	20	35 3/8	19 1/2	15 1/2	12 1/2	470	1	171	42	95	A-229
	3000	3	29	2	3/8	16	38 1/8	20	15 1/2	12 1/2	520	1	181	51	118	A-229
No. MD-1 Rail	4000	5	36	2	1/2	18	40 1/8	24 1/4	18	15	770	1	181	51	118	A-229
	3000	3	29	2	3/8	16	40	20	15 1/2	12 1/2	520	2	MA-4	33	130	MH-24B
	4000	5	36	2	1/2	18	42 1/4	24 1/4	18	15	770	2	MA-4	33	130	MA-24B
	6000	7 1/2	36	2	3/2	18	45 1/2	25	18	15	820	2	MA-12	33	210	MH-28BK
	8000	5	18	4	7/16	17	58 1/2	27 1/4	21	15	1010	2	MA-12	33	210	MH-28BK
	10000	5	18	4	1/2	17	60	27	21	15	1070	2	MA-12	33	210	MH-28BK

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

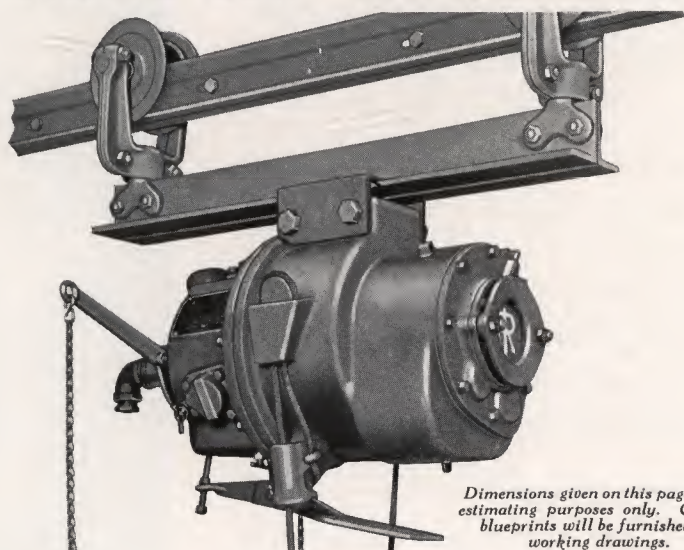
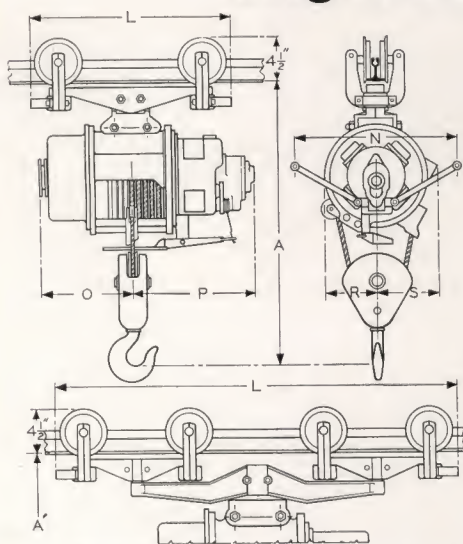


## Chicago Pneumatic Air Hoist



Track	Capacity	Lift in Feet	Lift Speed at 100 Pounds Pressure	Lowering Speed at 100 Pounds Pressure	A-B		B	T	Cable		Weight	Trolleys						
					To Rear of Hook	To Front of Hook			Length	Size		Required	Cat. No.	Length	Hook		Adapter	
							Head Room	Weight							Head Room	Weight		
No. 401 Rail	1000	15	45	70	9 1/2	17 1/2	9	36	1/4	217	1	162	17	33	30	30 7/8	47	A-228
	2000	15	42	68	10 1/4	21	9	36	5/16	375	1	171	42	37 5/8	75	35 11/16	95	A-228
	4000	15	21	44	12 3/8	22 9/16	9	36	3/8	505	1	181	51	43 1/8	100	38 1/4	118	A-229
No. MD-1 Rail	3000	15	31.5	75	12 3/16	22 1/16	9	36	9/8	502	1	MA-24	33	44 1/8	112	40 1/2	130	MH-24B
	6000	13	14	3.5	13	22 1/4	9	36	7/16	532	1	MA-22	33	48 1/2	186	44 1/2	210	MH-28BK
	10000	15	13	25.5	17	24 1/2	9 11/16	36	9/16	850	1	MA-22	33	63 7/8	186	60 3/8	210	MH-28BK

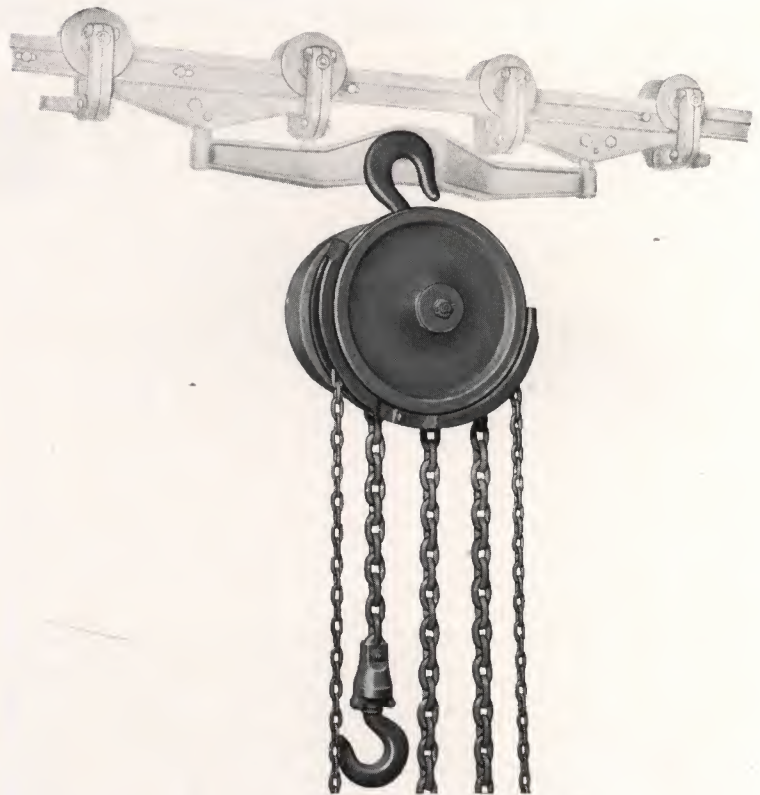
## Ingersoll-Rand Air Hoist



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.

Track	Frame	Type	Capacity	Lift in Feet	Cable		A	O	P	N/2	Weight	Trolleys				Adapter or Load Bar
					Parts	Size						Required	Cat. No.	Length	Weight	
No. 101 Rail	B	Rope	1000	15	2	1/4	29 1/4	10 11/16	14 1/8	8 1/2	220	1	162	17	37	A-227
	C	Rope	2000	15	2	5/16	35 5/16	12 11/16	15 5/16	8 13/16	330	1	171	42	89	A-228
	D	Rope	4000	15	2	3/8	41	14 3/4	16 3/8	8 13/16	450	1	181	51	110	A-229
No. MD1 Rail	C	Rope	2000	15	2	5/16	37 3/8	12 1/16	15 5/16	8 13/16	330	2	MA-4	33	132	MH-24B
	D	Rope	4000	15	2	3/8	43	14 3/4	16 3/8	8 13/16	450	2	MA-4	33	132	MH-24B
	D6	Rope	6000	14 1/2	2	7/16	44 1/4	14 3/4	16 3/8	8 13/16	460	2	MA-12	33	210	MH-28BK
	E	Rope	10000	15	2	9/16	52 1/8	15 1/2	19 1/8	8 13/16	875	2	MA-12	33	210	MH-28BK





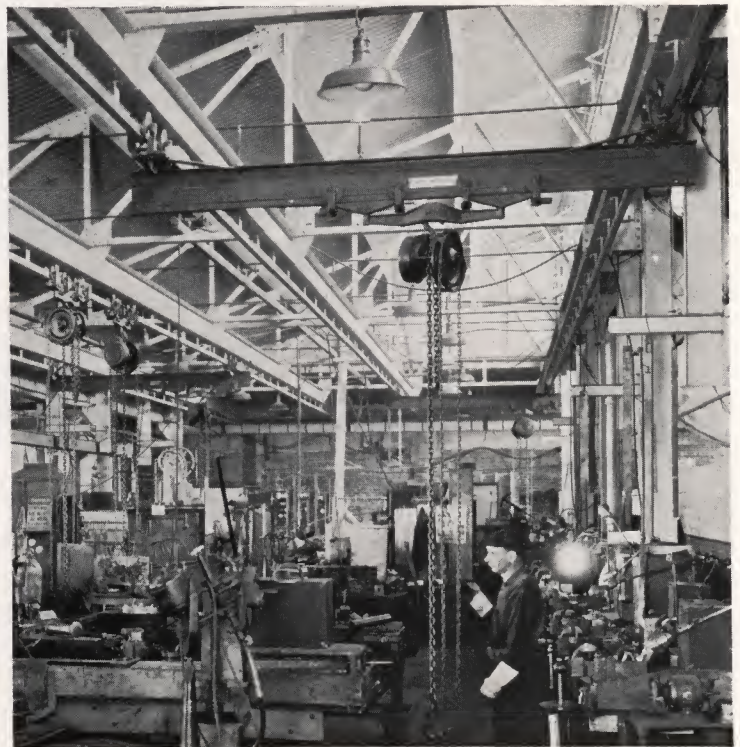
## No. 616 American MonoRail Chain Hoists

For clearance dimensions and shipping weight, see table on page 198

By means of the internal hook bearing which is seated inside the load bar any standard make of chain hoist can be mounted on American MonoRail trolleys. The top hook of the hoist seats on this bearing and is carried as closely as possible to the bottom of the track for minimum clearance with standard equipment.

Table on page 198 gives the numbers covering trolleys of proper capacity for the hoists listed.

Table also indicates the minimum clearance dimensions together with approximate shipping weights for the complete units including trolleys.



Two-ton Hoists on short cranes for service in die shop. Note use of auxiliary hoists on crane runway.





No. 636—One-Ton Capacity



No. 637—Two-Ton Capacity

## Low Headroom Chain Hoists with Trolleys



Low Headroom Hoist for heavy motor repair service. Two-ton crane interlocks with spur track to machine shop.

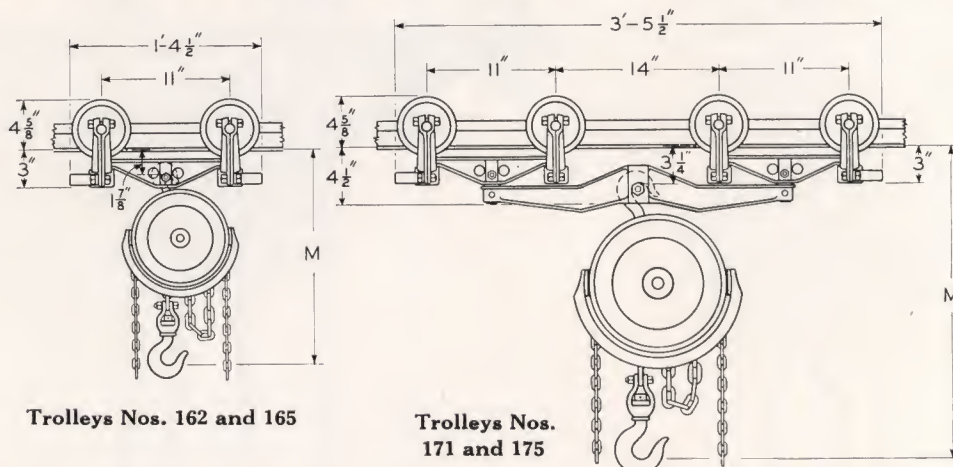
For clearance dimensions and shipping weights see, table on page 198

Where headroom is limited, we can furnish hoists mounted on special load bars eliminating the top hook entirely and thereby gaining the space ordinarily taken up by this hook. The special load bars are mounted on anti-friction bearings but the hoist frame cannot be swivelled on the trolley.

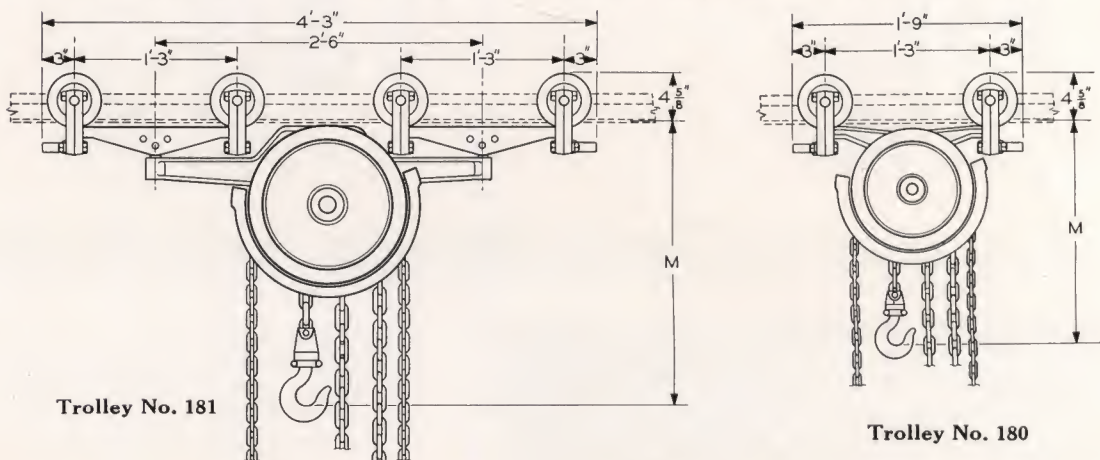
For extremely close conditions special load chain sheave frame for extended operation permits raising load up to  $6\frac{1}{2}$ " from the rail. Special drawing will be submitted for all such applications.



# Headroom Requirements for Chain Hoists



## Clearance for Low Headroom Hook-Up



Standard Lift—Feet	Hoist Capacity	Trolley Number	WRIGHT MFG. CO.				D. ROUND & SON				CHISHOLM-MOORE				YALE											
			Improved High Speed				Auto Bloc		Superior		Allite		Cyclone													
			Standard Hookup		Low Head Hookup*																					
			Distance “M”	Shipping Weight	Distance “M”	Shipping Weight	Distance “M”	Shipping Weight	Distance “M”	Shipping Weight	Distance “M”	Shipping Weight	Distance “M”	Shipping Weight												
8	500	165	14 7⁄8	104	11 1⁄8	113	16 1⁄8	94	13 7⁄8	99	16 5⁄8	73	16 3⁄8	89	13 7⁄8	99										
		162	14 7⁄8	109													16 1⁄8	94	13 7⁄8	105	16 5⁄8	79	16 7⁄8	98	13 7⁄8	105
		180	15	113													16 3⁄4	98	14	109	16 3⁄4	83	17	102	14	109
8	2000	175	16 1⁄8	146	14 1⁄4	152	17 3⁄8	131	15 1⁄8	142	17 7⁄8	116	18 1⁄8	135	15 1⁄8	142										
		180	17 7⁄8	152													19	125	17 1⁄2	152	20	109	19 1⁄2	132	17 1⁄2	149
		171	18 3⁄8	193													20 1⁄8	166	18 3⁄8	193	21 1⁄8	150	20 3⁄8	173	18 3⁄8	190
8	3000	181	20 1⁄8	218	16 1⁄2	263	21 1⁄4	191	19 3⁄4	218	22 1⁄4	175	21 3⁄4	198	19 3⁄4	215										
		171	21 3⁄8	238													23 1⁄8	224	20 3⁄8	239	25 3⁄8	206	23 3⁄8	255	21 3⁄8	245
		181	22 1⁄2	263													24 1⁄4	249	21 1⁄4	264	26 1⁄2	231	24 3⁄4	280	22 1⁄4	270
9	4000	181	24 7⁄8	330	18 3⁄8	330	27 1⁄4	275	25 1⁄4	335	26 1⁄2	231	26 1⁄4	291	25 1⁄4	344										
		MA-12	28 3⁄4	310													30 3⁄8	255	28 3⁄8	315	29 3⁄8	211	29 3⁄8	271	28 3⁄8	324
		MA-24	25 3⁄8	342													28 3⁄4	287	26 3⁄4	347	27 1⁄2	243	27 1⁄4	303	26 3⁄4	356
10	6000	MA-22	30 7⁄8	445	25 1⁄2	445	32 3⁄8	418	35 7⁄8	467			29 3⁄8	435	37 7⁄8	510										
10	8000	MA-22	33 1⁄2	514													34 3⁄8	450	39 3⁄8	538	42 3⁄8	451	42 7⁄8	544		

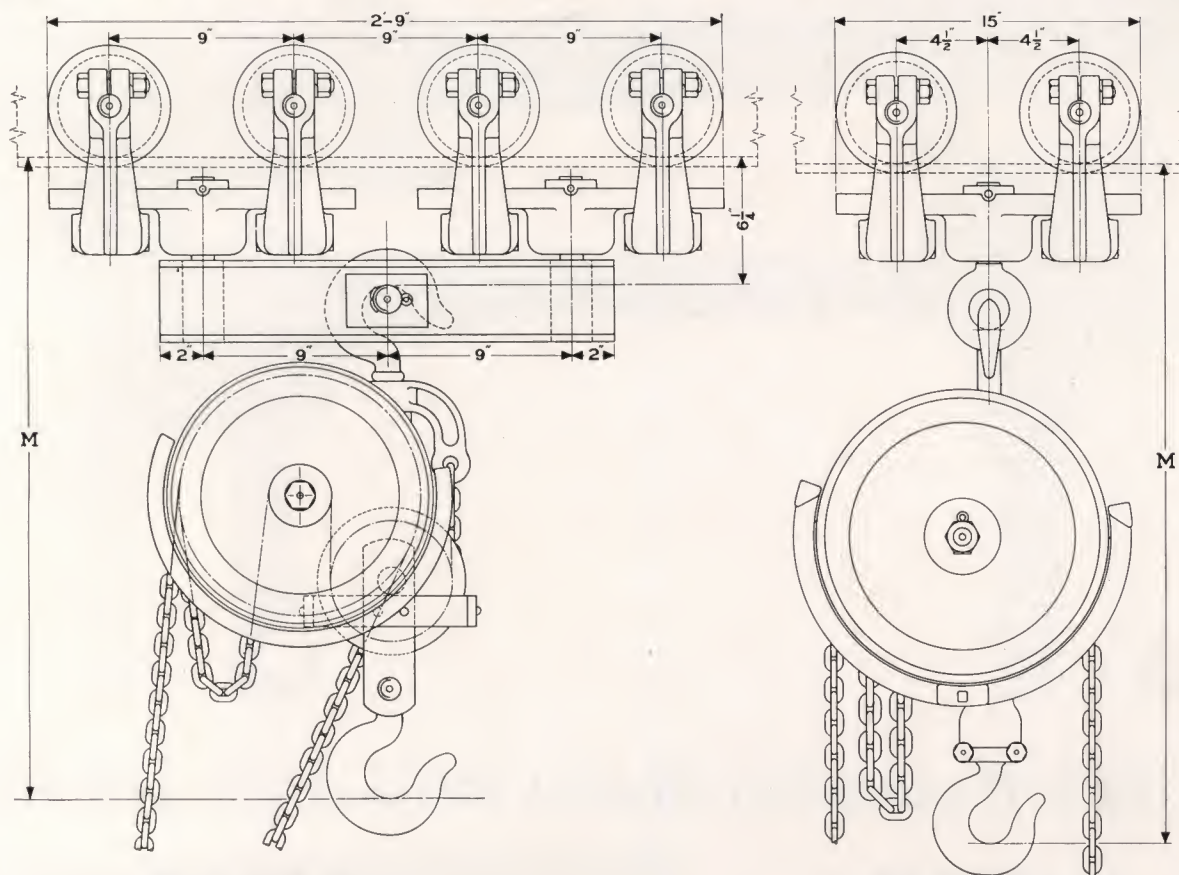
\*Trolleys for Low Headroom Wright Hoists equipped with special load bars.

NOTE—Shipping weights include weight of trolleys listed.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Headroom Requirements for Chain Hoists



**Trolley No. MA-22**

See table on opposite page for minimum clearance of chain hoist mounted on RailMaster Trolleys.

**Trolley No. MA-12**

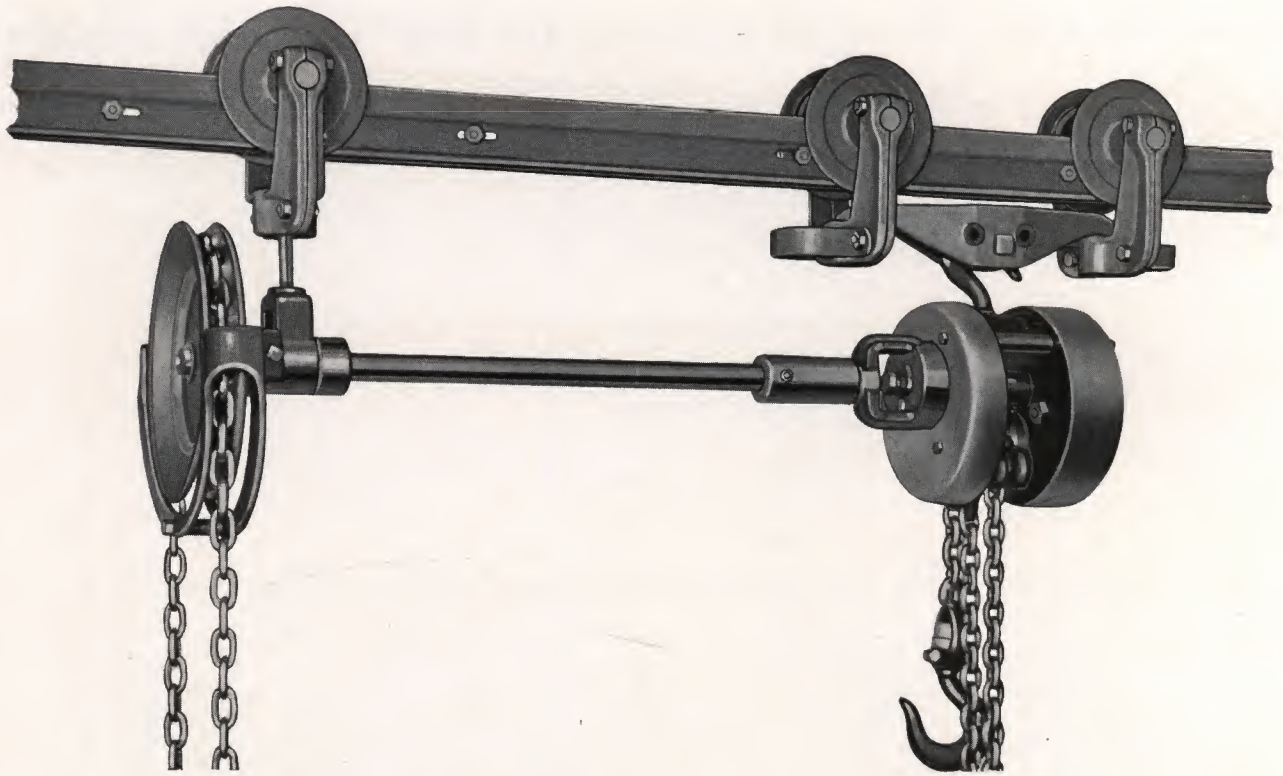
Special low headroom application can be arranged for trolleys shown above by means of fabricated load bars.



Low headroom application of chain hoists on RailMaster Trolleys for operation on 3-ton cranes.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*





## No. 617 Extended Hand Wheel Chain Hoist

### SPECIFICATIONS

**Trolleys:** See table on page 198. Add two-wheel trolley for hand wheel.

**Length:** Standard extension 3 feet. Additional length up to 6 feet made to order.

**Lift:** See table on page 198.

**Finish:** Green Enamel.

Where it is necessary for operator to stand at some distance from the load being handled, the extended hand wheel mounted on a two-wheel trolley provides easy hoist operation.

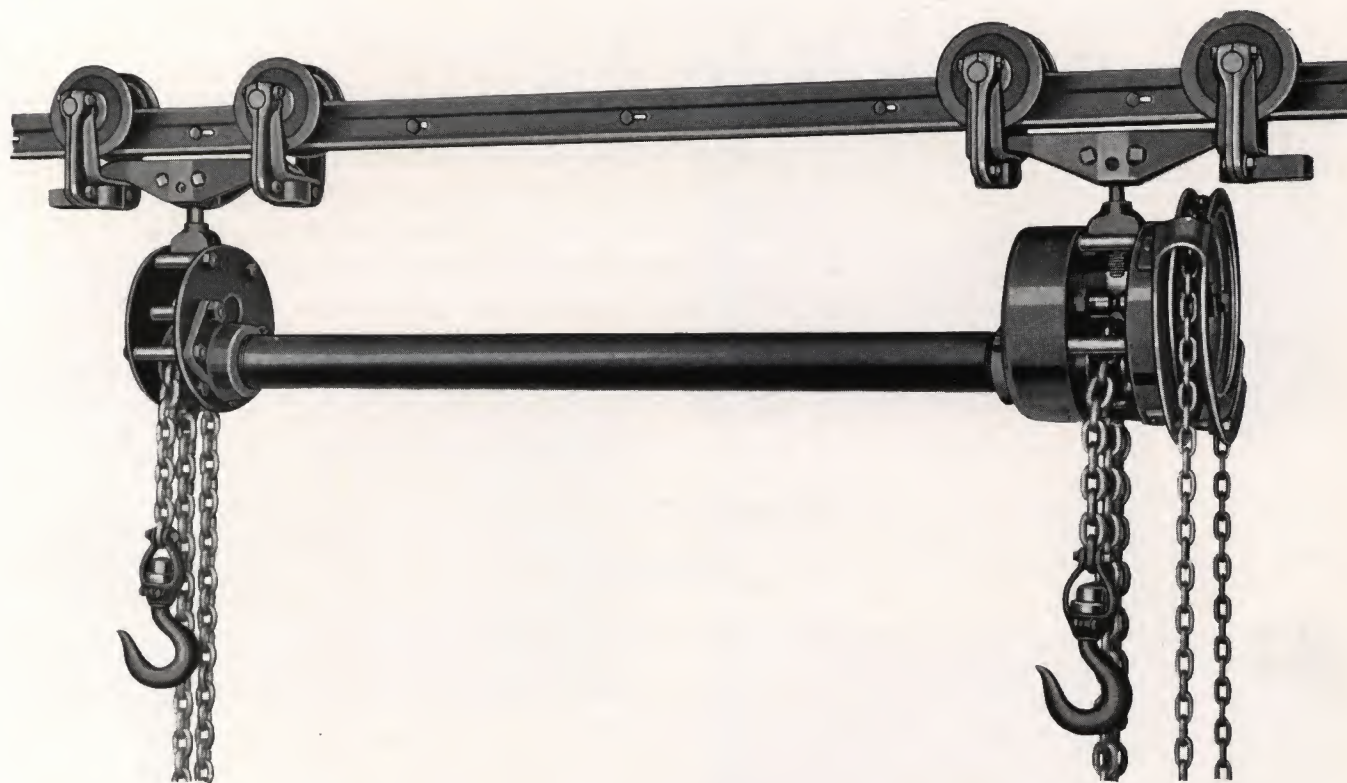
This special adaptation proves advantageous in the foundry for handling ladles of hot metal. It is also used where chain or hand contact with load may damage product.

Standard extension of shaft may be increased to 6 feet with free operation of trolleys over hoist. This extension may also be applied to No. 681 Twin Hook Chain Hoists



Extended hand wheel protects operator from heat of metal in ladle carried on eight-wheel trolley.





## No. 681 Twin Hook Chain Hoist



Twin Hook Hoist for handling tanks in a gelatin plant. System was udyllited to resist corrosion.

### SPECIFICATIONS

**Capacities:** 500 to 8000 pounds.

Since these hoists are furnished in various types to meet each particular requirement, no standard dimensions are given here. Complete information will be furnished on request.

**Lift:** See table on page 198.

**Finish:** Green Enamel.

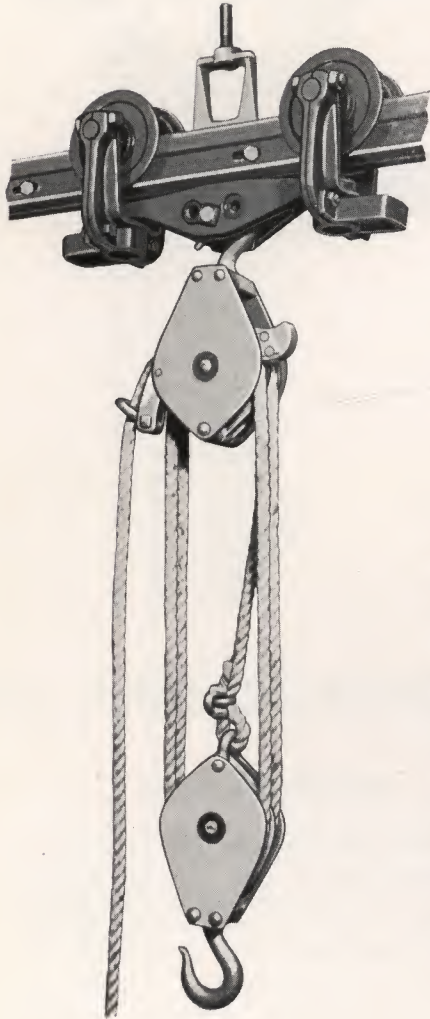
This hoist is designed for loads where a two point lift is desirable or necessary as in the handling of automobile or truck bodies, buckets, or long material such as bars, pipe, sheets, lumber or posts.

For approximate dimensions between track and load hook see illustrations and table on page 198 covering standard spur gear hoists.



# Special Hoist Applications

Since it is impossible to list and illustrate all hoist applications to MonoRail systems, this catalog must be limited to the general types in most common use. American MonoRail engineers will gladly submit proposals covering any special hoist adaptations other than shown in this book.



## Lanebro Rope Hoist

### With Automatic Lock

This hoist consists of two sets of sheaves which turn on roller bearings. One end of the rope is reeved around becket on lower block. The rope is then threaded through the sheaves, the final turn under the locking dog, which is formed to fit the lay of the rope and locks automatically when load is suspended on the lower block. Pull on end of rope releases dog and raises load. For a quick lift of light loads this rope hoist offers the most inexpensive means. Table below gives list of capacities with proper trolleys.

### SPECIFICATIONS FOR LANEBRO HOISTS WITH TROLLEYS

Capacity	Lanebro Hoist No.	Trolley No.	No. Wheels	Minimum Headroom	No. of Sheaves	Size Rope	Shipping Wgt. with Trolley
600	80	189	4	21"	2 and 1	1 1/2"	20 Lbs.
800	85	165	4	19"	2 and 2	1 1/2"	36 Lbs.
1,000	90	165	4	25"	2 and 1	5/8"	42 Lbs.
1,250	140	162	4	26"	2 and 1	3/4"	48 Lbs.
1,500	100	162	4	25"	2 and 2	5/8"	55 Lbs.
1,800	150	180	4	26 3/4"	2 and 2	3/4"	59 Lbs.
		175	8	27 1/4"			93 Lbs.
2,000	110	180	4	26 3/4"	3 and 2	5/8"	60 Lbs.
		175	8	27 1/4"			95 Lbs.
2,500	160	171	8	27 1/4"	3 and 2	3/4"	104 Lbs.
3,000	120	171	8	27 1/4"	3 and 3	5/8"	105 Lbs.
3,500	130	181	8	27 3/4"	4 and 3	5/8"	135 Lbs.
3,700	170	181	8	27 3/4"	3 and 3	3/4"	135 Lbs.
4,000	180	181	8	28 3/4"	4 and 3	3/4"	143 Lbs.

Note: Shipping weight includes weight of trolley. Rope not included with these hoists.



Curtis Air Cylinder mounted on American MonoRail Trolley for efficient low cost handling over limited areas where compressed air is available for each lift.



# Auxiliary MonoRail Equipment

On the following pages in this section will be found illustrations suggesting the possible equipments for augmenting the service obtainable from a MonoRail system. Specialized experience enables American MonoRail engineers to suggest and apply any auxiliary devices to meet the particular handling requirements of any product.



**Beam Scale Section**

Forty-foot track scale section for weighing airplane parts without rehandling from trolleys. On pages 208 and 209 are shown two typical standard MonoRail scale applications.



**Troughs and Buckets**

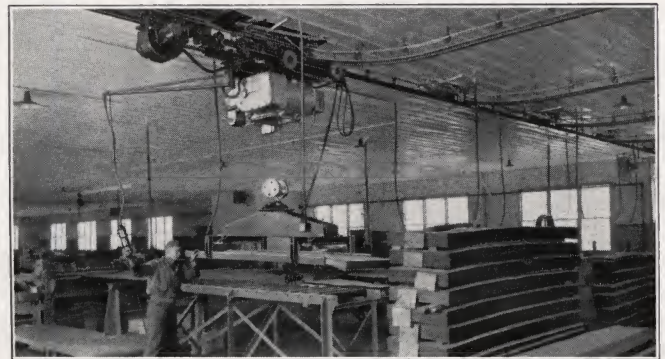
American MonoRail Trolleys applied to standard troughs for handling dough through conditioning rooms in large bakeries. Illustrations on page 212 show dumping buckets of various types.

Engineers in daily contact with widely varying handling problems can render valuable aid in laying out any MonoRail system. Their services are available without obligation



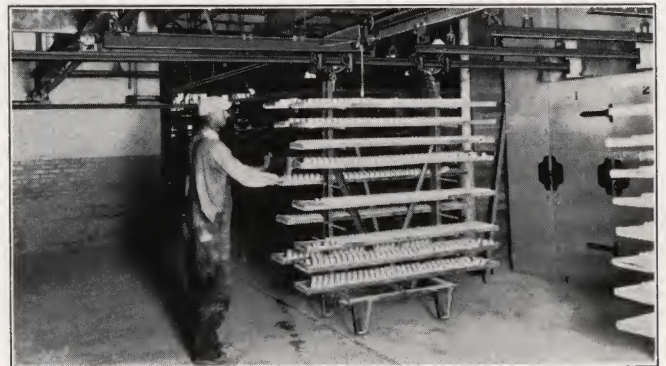
**Single Post Lift**

On special trolley frames bananas move between railroad cars to ripening rooms in basement over MonoRail system employing a single post lift section. Fruit is handled at low cost with little or no damage.



**Electric Sheet Grab**

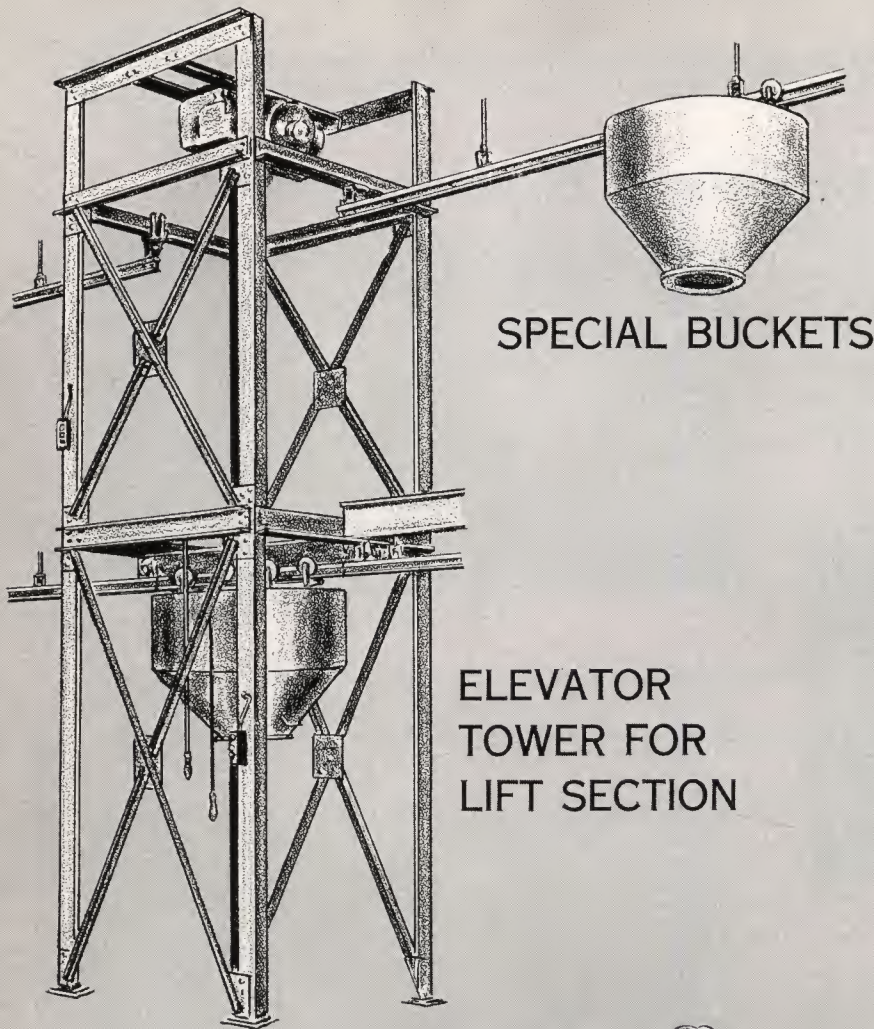
From push button control operator picks up and deposits three tons of sheet steel by means of this electrically operated grab. Complete description on page 211 where other grabs are shown.



**Special Trolley Racks**

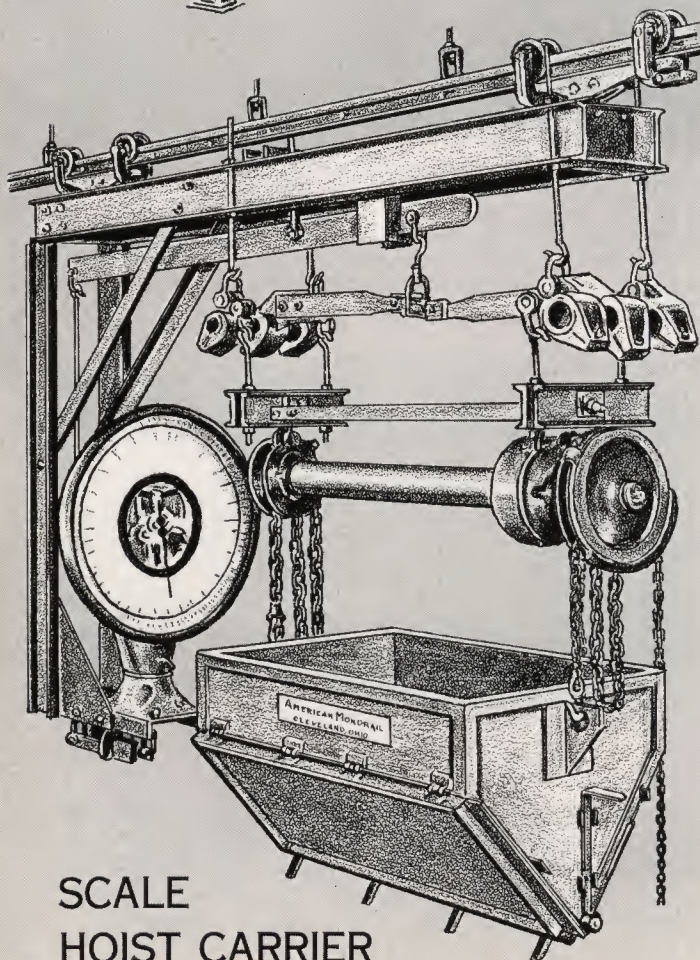
Porcelain ware on removable pallets are handled into ovens on special trolley racks. Following pages contain many ideas for special racks to carry various products.



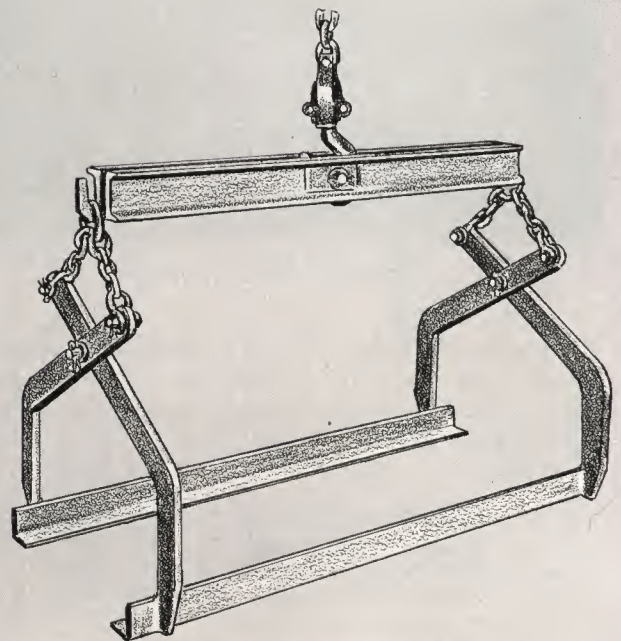


**SPECIAL BUCKETS**

**ELEVATOR  
TOWER FOR  
LIFT SECTION**



**SCALE  
HOIST CARRIER**



**SHEET STEEL GRAB**

# AMERICAN Auxiliary

Sketches on these pages suggest various arrangements for augmenting the service obtainable from a Mono-Rail System. Specialized experience with widely varying handling problems enables American MonoRail engineers to suggest and apply any auxiliary devices to meet special handling requirements.

## Floor-to-Floor Transfer

Standard Lift Sections operating in structural towers, either open or enclosed, transfer carriers from mono-rail system on one floor to system at any other level in the building. Any type of electric or air operated hoisting equipment can be applied.

## Weighing in Transit

A wide variety of designs can be used for weighing materials under practically any load conditions. Scale



# MONORAIL Equipment

beam sections inserted in the track permit check weights in some systems, while special carrier units take the scales to various points for make-up of batch or charges.

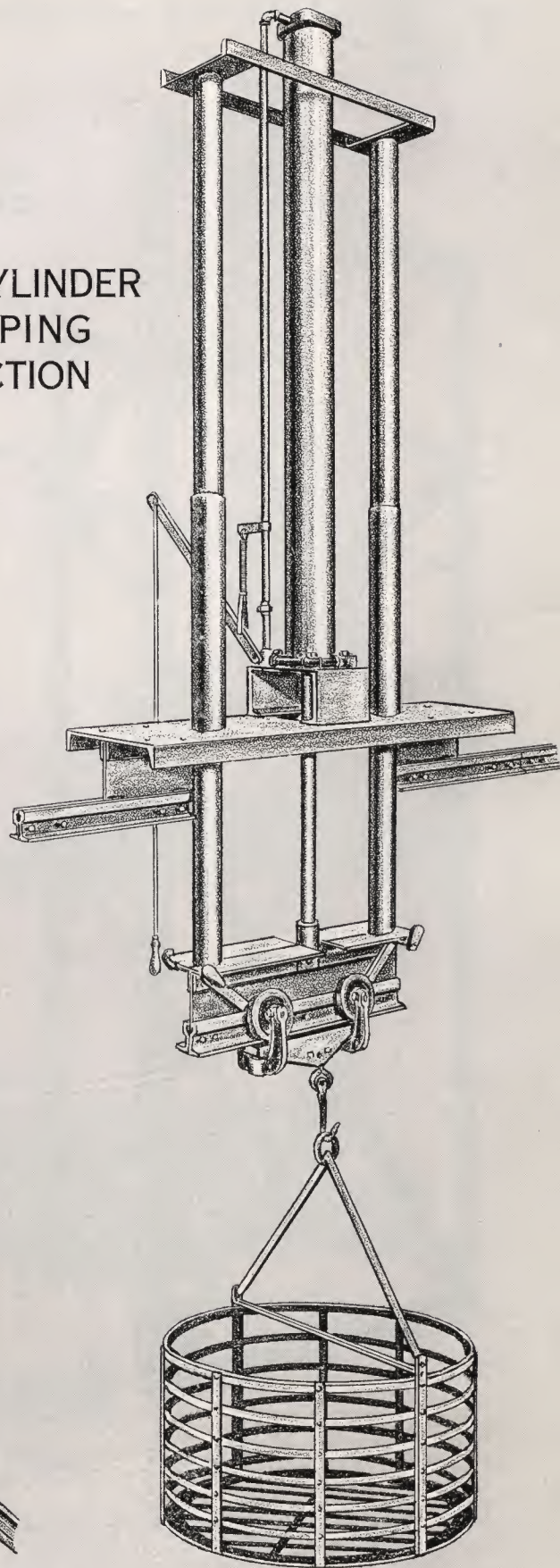
## Dipping and Gravity Systems

Sections of track in the system can be raised or lowered at any point to dip products in wire baskets or racks for cleaning, finishing and other processes. Carriers can also be raised to high points for down-hill runs on gravity operated loop systems.

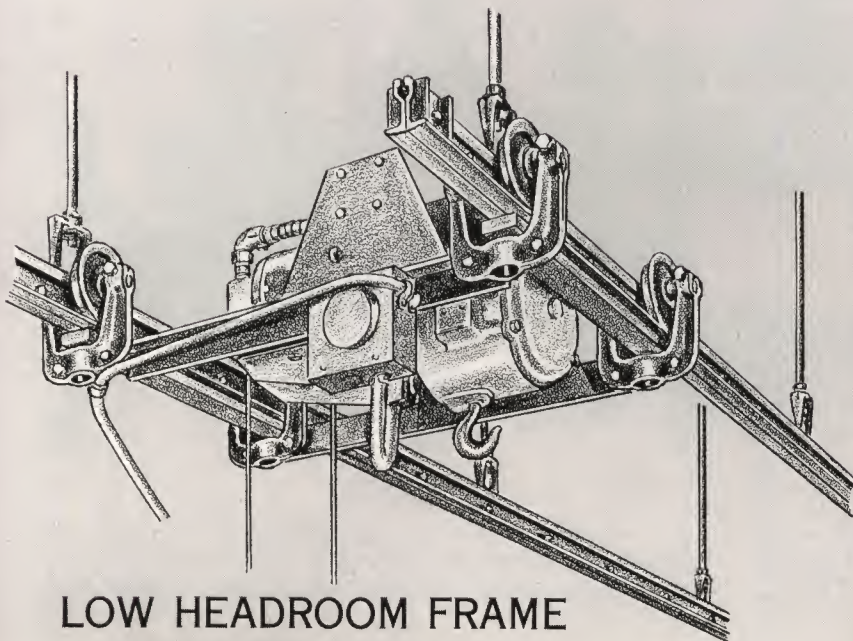
## Grabs, Racks and Buckets

American MonoRail trolleys can be applied to many standard load handling devices. Special designs to meet unusual conditions often result in increased time-saving, extra safety and automatic operation of American MonoRail systems.

## AIR CYLINDER DIPPING SECTION



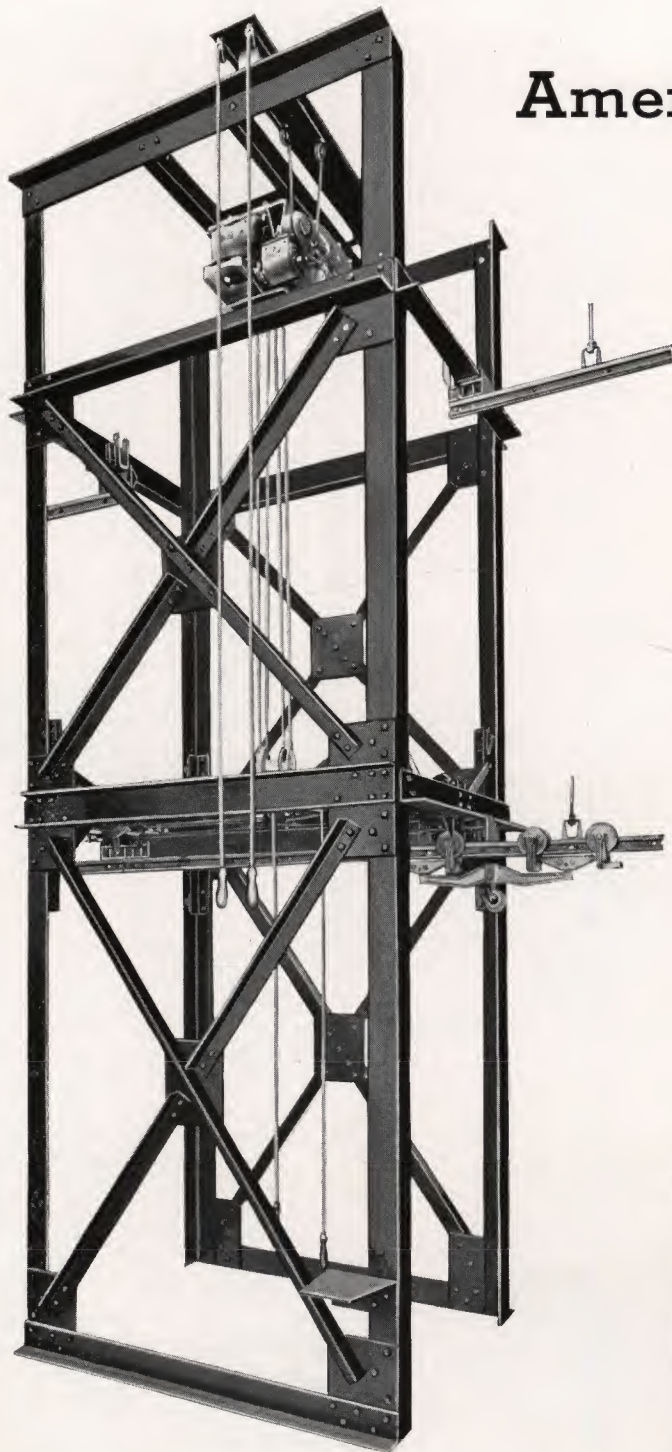
SPECIAL BASKETS



LOW HEADROOM FRAME  
FOR ELECTRIC HOIST



## American MonoRail Lifts



No. 650

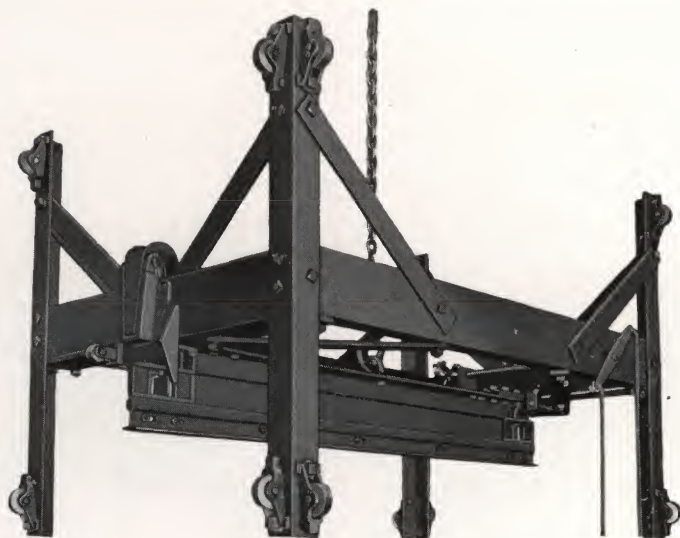
Illustrating lift section aligned with connecting track at lower level of tower. Trolley crossing at interlock on to lift beam. Typical methods of applying American MonoRail Lift Towers will be found on page 247.

The American MonoRail Lift consists of a structural steel frame to support the hoist and guide the MonoRail lift section. Trolleys on this section are transferred between track systems on various levels. Latching device centers the lift section on connecting tracks at all levels. Alignment does not depend on the hoist. Loads are supported at track connection by the stop latch, which also holds the track in accurate register. Automatic stops protect all open tracks.

Adjustable guide rollers keep the lift in correct position regardless of location of trolleys on the section. They eliminate binding, reduce friction and compensate for variations in the structural tower.

Any type of hoist may be used according to the speed required for lift. Two point suspension is necessary where lift section span is greater than 8 feet or where loads are out of balance.

Towers may be enclosed for fire protection as shown on page 22 illustrating laundry installation. See pages 246 and 247 for further data covering MonoRail lifts.



No. 651

Lift sections are adapted for use with both Girder Rail and Rail-Master Track systems. See pages 246 and 247 for dimension details.



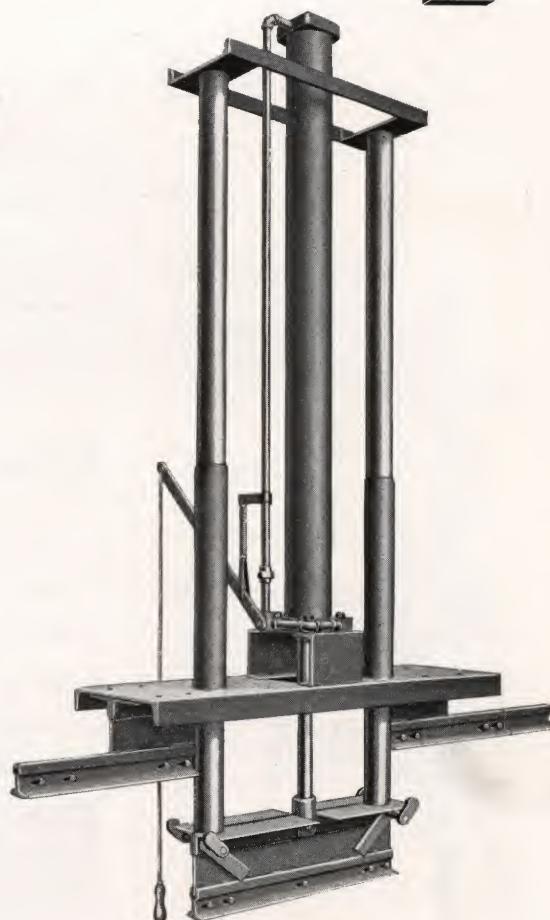
# Air Lifts and Dipping Machines

With air available, lifting and dipping operations can be performed without transfer of loads on MonoRail trolleys. Standard air cylinders mounted as illustrated, with either plunger or cable suspension, allows rapid lowering and lifting of loads carried on trolleys, long racks or in perforated containers for any of the various processes requiring vertical movement.

Transfer of trolleys or carriers between two definite levels can also be arranged with adequate safety devices protecting all open track ends.

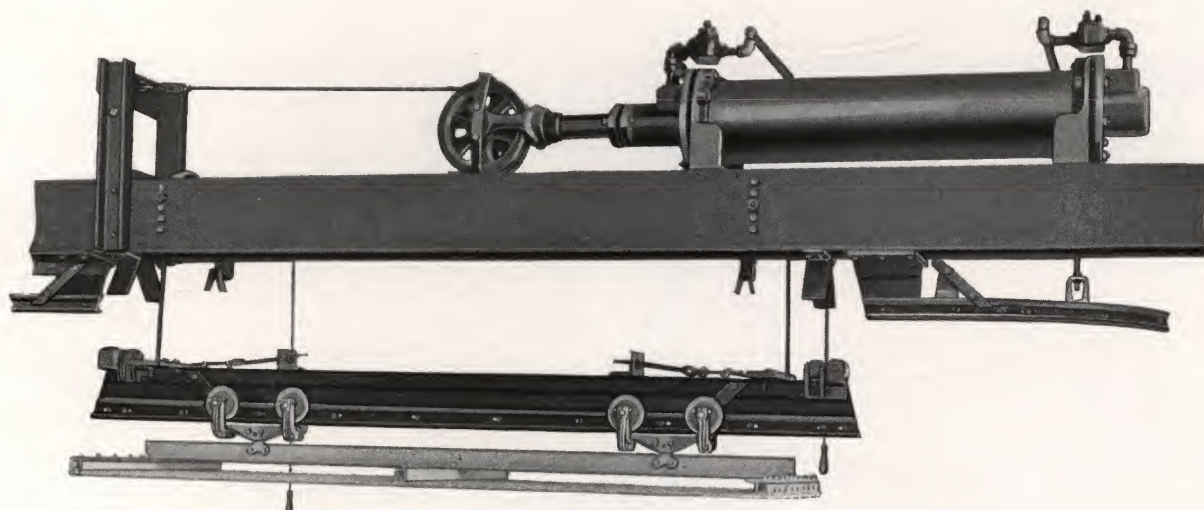
## ELECTRIC HOIST APPLICATION

Where air is not available, an electric hoist can be mounted in similar manner to the air cylinder illustrated. Further description together with dimensional data covering Lifting and Dipping equipment will be found on pages 248 to 250. American MonoRail engineers are available for assistance in working up details covering any type of MonoRail lifting or dipping application.



**No. 653**

Illustrating the plunger type dipping machine with vertical guides above the track.



**No. 654**

Simple application of air cylinder for two point cable suspension. This method is used for low headroom conditions. See page 248 for

further detail in drawing shown. American MonoRail engineers will furnish suggestions and designs without charge.





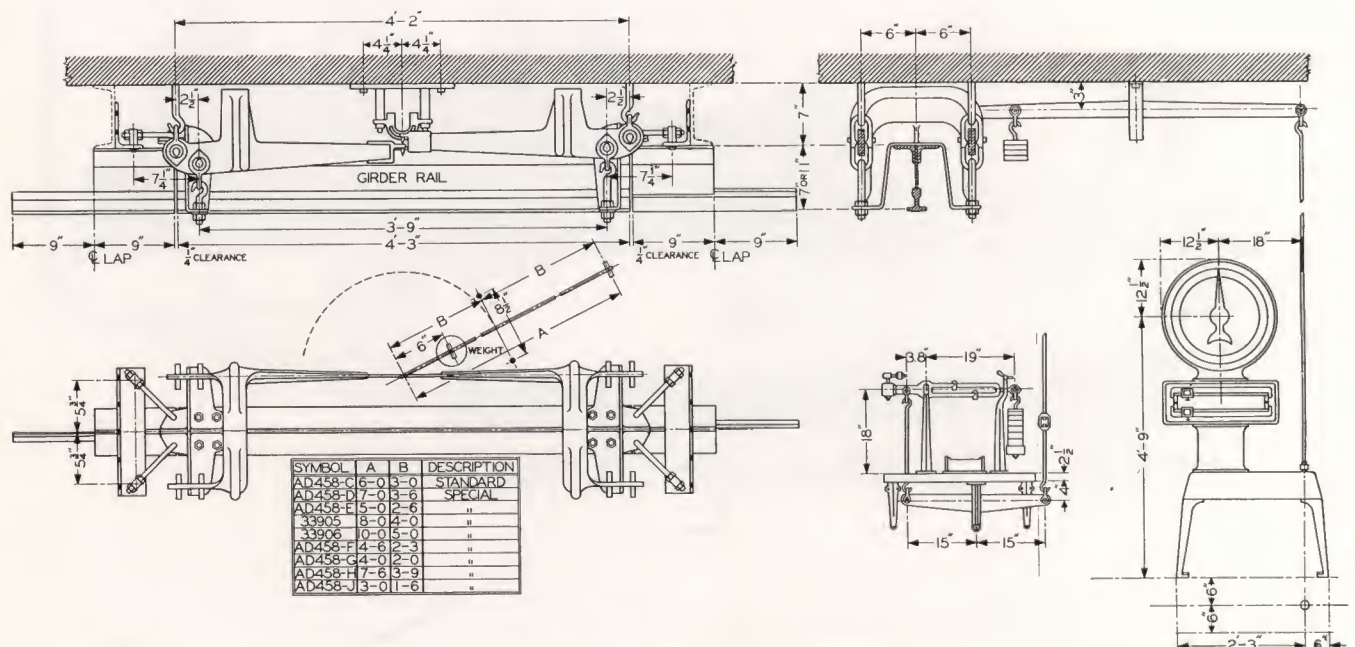
Any standard dial type scale can be applied to a MonoRail system for weighing or counting loads in transit.

# Dial Type MonoRail Scale

A simple MonoRail section, long enough to hold trolleys or carrier, is inserted in the track system and attached to any standard weighing or counting mechanism. The cost of such installation is usually lower than excavation for platform scales and the possibilities for saving in time or labor are greatly increased.

Loads travel over the section in original containers and are weighed

or counted by manual or automatic operation of the scale. Accurate control can be maintained instantaneously with no re-handling. Visible or concealed records can be kept at local or remote points. Counting and batching can also be accomplished, special dial faces being available to meet each scale requirement.

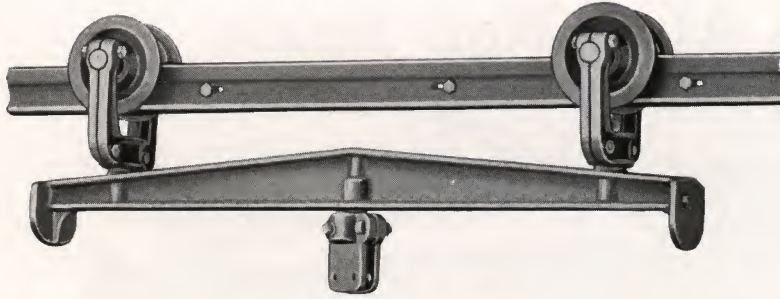


*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*









**No. 153—Capacity 2000 lbs.**

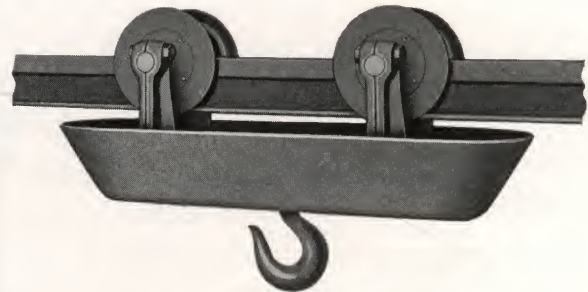
Rack trolley with swiveling center support, end guides and latch hole.

## No. 153 Swiveling Rack Trolley

This trolley was built for frequent turning of a rack supported by the center swivel. Swivel is a two part forging equipped for pressure lubrication and sealed with a fibre gasket. Ends of the steel alloy load bars are formed to guide the rack and have holes for latching racks in position parallel to track.

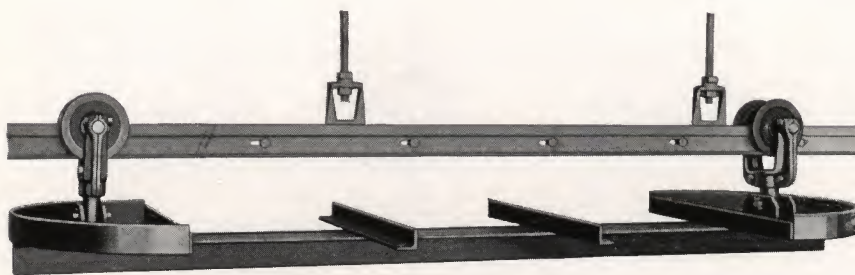
## No. 133 Dust Collector Trolley

One of the many special trolleys built for service over processes requiring protection against falling particles of dust or metal. Cast or fabricated pans, some with soft grease, capture and hold dust particles dislodged in passage of trolleys over the track. Trolleys may be equipped with fibre wheels to eliminate loosening of metal particles.



**No. 133—Capacity 1000 lbs.**

Dust collecting pan mounted beneath trolley wheels to catch falling particles loosened from track.



**No. 149—Capacity 1000 lbs.**

Bananas strung with rope on the cross angles of this special trolley rack are handled without damage.

## No. 149 Banana Rack

As shown in illustrations on page 17, eight bunches of bananas are strung on this special trolley rack for transportation over MonoRail system between railroad cars and ripening rooms. Hanging of fruit and separation of bunches prevents bruising and eliminates rehandling from original racks.

Flexible design of standard trolley parts permits combination into special assemblies to meet practically any condition arising from unusual shape, size or weight of loads to be handled. For obvious reasons

only a few of the many special designs can be shown in this book.

Simple carriers developed from standard parts are usually inexpensive but result in considerable saving of handling costs sufficient to warrant the investment.



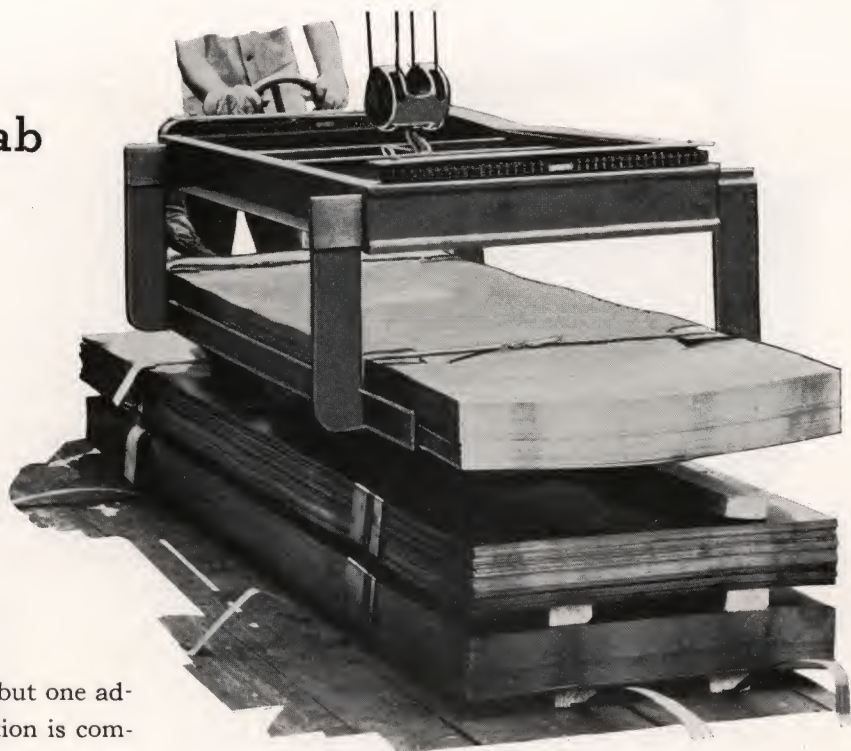
## No. 1468 Windsor Sheet Grab

Hand Wheel Operation

Combining extreme low headroom with maximum range, this grab meets every requirement of sheet stock handling. The Windsor Grab permits handling of stock pallets from high trucks and under low ceilings. Various models accommodate range in widths from 12" to 72". Width range of each model is one to three. Models handle any length required.

Operation of the grab is simple, requiring but one adjustment by hand wheel or motor. Operation is completely safe with lock retaining grip and level support of surfaces in all positions.

Damage to stock is eliminated by smooth surface and parallel contact of the grab to surface of stock. This prevents crimping, fowling or scoring of sheets.



No. 1468

Hand Operated Windsor Grab

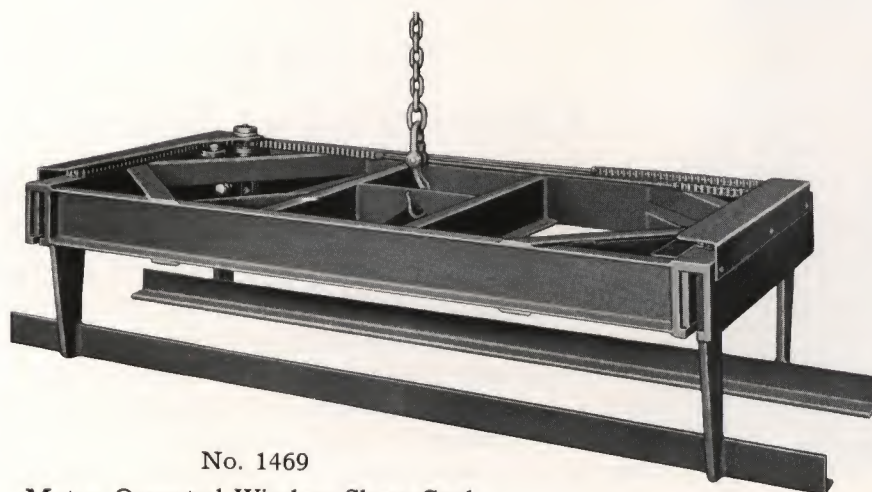
When ordering specify range of stock width, length and weight. Also position of hand wheel.

## Advantages of the Windsor Sheet Grab

Low Headroom  
Maximum Range

Simple Operation  
Complete Safety

Minimum Stock Damage



No. 1469

Motor Operated Windsor Sheet Grab

## No. 1469 Windsor Sheet Grab

Motor Driven

The above description of Windsor Grab advantages apply equally to the motor operated model. When ordering specify current characteristics as well as other data as requested above.





No. 1430

## No. 1430 Side Dumping Bucket

One or Two Point Suspension

This standard side dumping bucket for use with twin hook hoist can be mounted on trolleys for operation over a definite level. Made of heavy gauge sheet metal with angle frame, the all welded construction permits handling of liquid or wet materials. Hand latch on both sides prevents tipping. Table below gives sizes of standard buckets with side and top clearance.

Size of Bucket Cu.Ft.	Overall		Inside			Outside	
	Length	Height	Width	Length	Depth	Top to Hook Connec.	Side Clear- ance for Dumping
15	4'-0"	39"	26"	3'-7 1/2"	26"	12"	20 1/2"
20 1/2	4'-0"	44 1/2"	30"	3'-7 1/2"	30 1/2"	14"	24"
27 1/2	4'-0"	49 1/2"	36"	3'-7 1/2"	34"	15 1/2"	27"

## No. 1432 Heavy Tipping Bucket

Single Point Suspension

For rough service carrying abrasive materials this bucket is built of steel plate welded together with extra reinforcement at edges. Bucket tips easily with hand lever which cannot trip until operated. Casters for floor movement can be furnished at additional cost.



No. 1432

Capacity in Cu. Ft.	Body Dimensions			Over All Width	Over All Height
	Length	Width	Height		
6	32	22	19	29	37
8	34	26	20	33	39
10	36	29	21	36	41
12	38	30 1/2	22	38	43
14	40	31	24	39	44
16	42	33	25	41	47
18	44	33	27	41	48



No. 1470

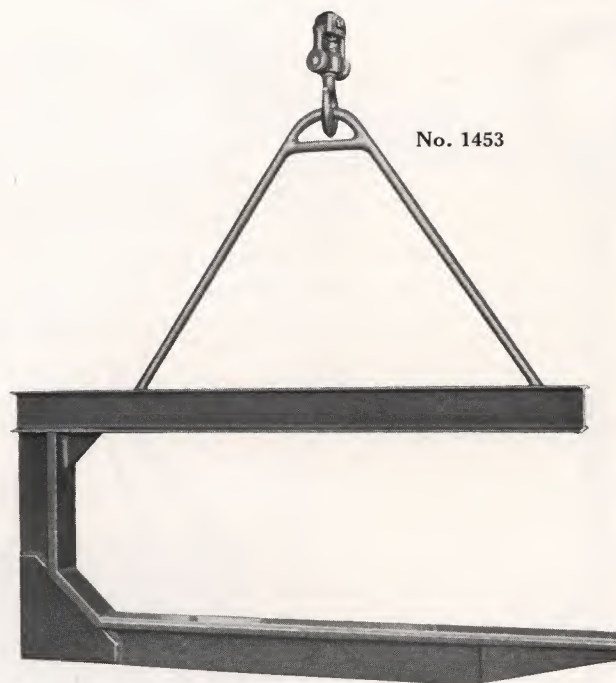
## No. 1470 Chute Bottom Dump Bucket

Coal, ash or other bulk dry material requires a bucket for hoisting and trundling with bottom dump for hopper loading. Bucket No. 1470 serves this purpose in every way. The large side wheels afford easy floor movement with a caster for added support. Bottom chute assures accurate dump, the positive action of the gate controlled by rod to arm lever. This bucket can be furnished without wheels where overhead operation only is required.



## No. 1453 Hair Pin Coil Hook

This single suspension hook is used with an electric or hand chain hoist in handling coiled wire, rod or flat steel. Overall dimensions can be varied to meet the requirement of any coil handling operation. Hook can be specially treated or fabricated from non-corrosive metal for dipping in acid cleaning baths. Write for prices covering special application.



No. 1453



No. 1452

## No. 1452 Open Top Barrel Grab

Operation of this toggle type grab is extremely simple, requiring no movement of barrel or hook up of sling for holding. Barrel is prevented from tipping by the rigid arms extending over the top. Operator merely sets arms around barrel and raises hoist hook to pick up load. Specify size of barrel and weight to be carried when ordering.

## No. 1471 Adjustable Drum Grab

Designed to save headroom in handling drums, this grab can be adjusted between 30 to 40 inches for drums containing 40 to 60 liquid gallons. It is built of heavy steel angles with flame cut plate load eye and grapples. Specify size and weight of drum when ordering.



No. 1471



## Chain Slings

No. 1461 Single Chain

No. 1462 Two Chains

No. 1463 Three Chains

No. 1464 Four Chains

An almost endless variety of "pick-up" and handling jobs can be done with chain slings. Illustrations on this page show a few of the unlimited combinations possible.



No. 1461



No. 1465



No. 1462

## Barrel Chain Grabs

No. 1465 Three Chains with chine hooks.

No. 1466 Adjustable Barrel Grab.



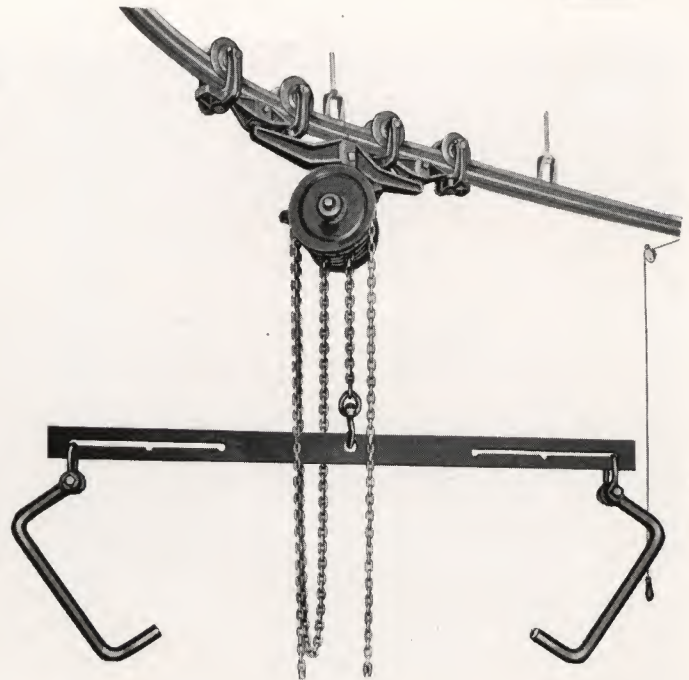
No. 1466





## No. 1460 Adjustable Roll Grab

Where side entry is possible through the core, rolls of various lengths can be picked up with this adjustable grab on chain or electric hoist hooks. Core of roll must be strong enough to hold weight without damage to stock. Load acts as toggle against hook ends preventing release of roll until withdrawn. Specify maximum and minimum size of rolls to be handled when ordering.



No. 1460



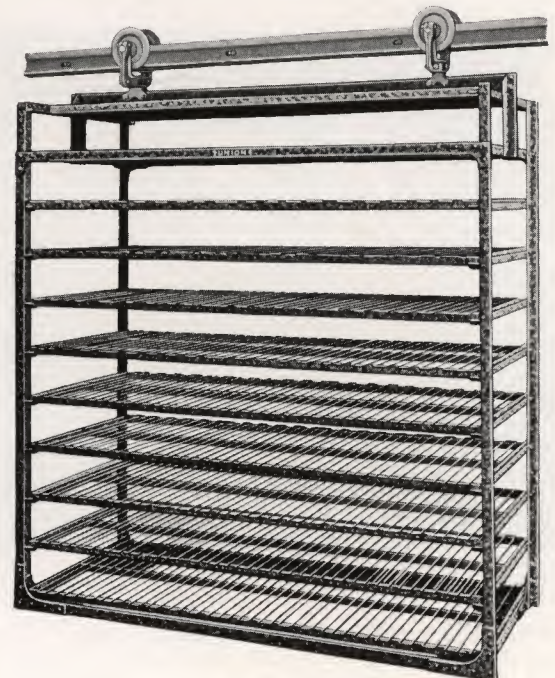
No. 1458

## No. 1458 Removable Pallet Rack

Carrier rack for pallets or trays containing articles such as ceramic ware or molder's cores to be handled to ovens or driers. Rack is shown with pallets removed. See page 221, Figure 221C, for picture of rack loaded with pallets. Rack may be removed from trolleys for storage or process.

## No. 1467 Galvanized Rack

Consisting of a light weight angle frame with wire shelves or trays that can be removed. These racks give excellent service in bakeries handling pans or finished bakery. No. 1467 Rack is mounted on two 2-wheel trolleys with standard swivels. Other racks are available for heavier loads. Designs applicable to a wide variety of service can be submitted. Give size of product, total load and nature of handling requirements for rack designs.

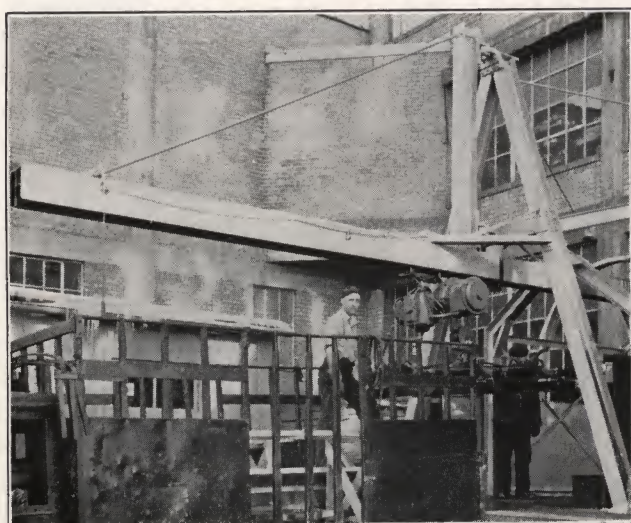


No. 1467





**Fig. 216A**—Heavy duty hand operates system covers entire steel storage yard. Long span carry of RailMaster Track keeps superstructure requirements at a minimum for installations of this kind.



**Fig. 216B**—Interlocking Jib with shielded electrification at receiving dock for moving steel on elevator to basement storage.



**Fig. 216C**—Two-ton loads of sheet steel are picked up with manually operated grab and electric hoist on a swinging jib. MonoTractor transfers load across interlocking cranes to any spot inside warehouse.





Fig. 217A—Crane system for handling wire coils is suspended from extremely light structure. Loads travel across interlock sections near building for transfer from gondolas to cranes and from cranes into building.



Fig. 217B—MonoTractor propels 2-ton loads of coil on special hooks. This is part of system illustrated above for handling wire through storage and process.

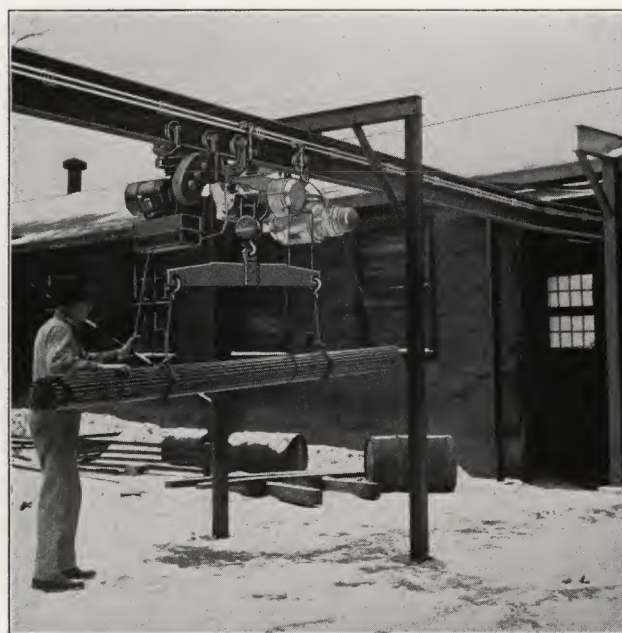
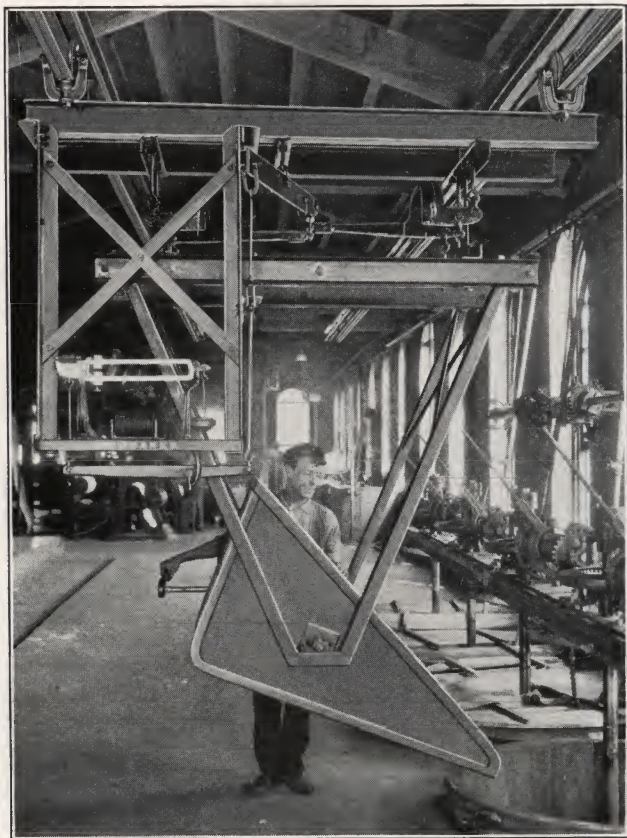
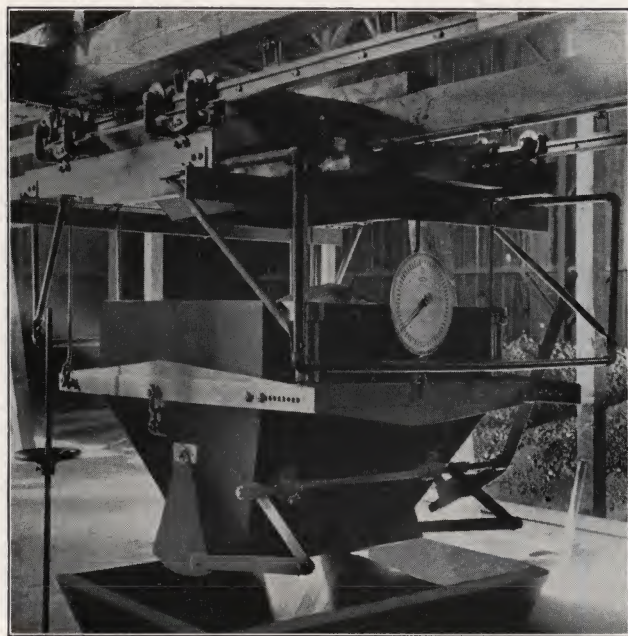


Fig. 217C—Simple frames support RailMaster track between two buildings. American MonoTractor handled heavy loads of rod with speed and safety up and down grades.





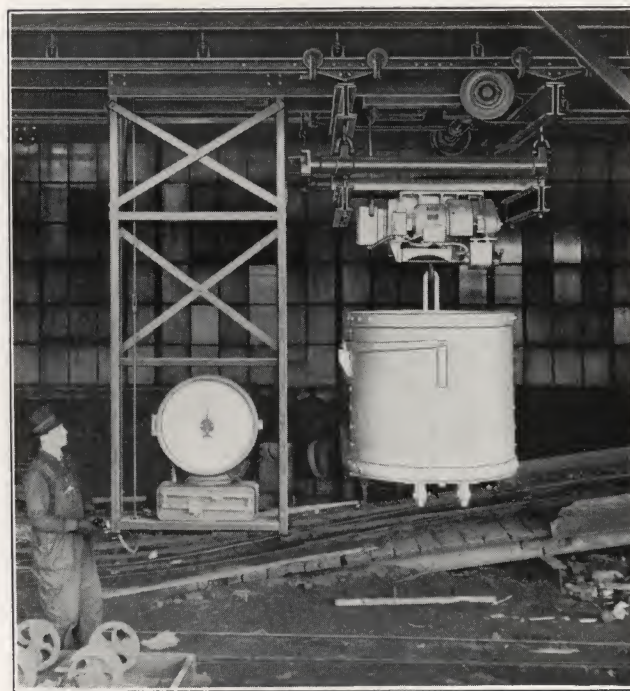
**Fig. 218A**—Special batch carrier with built-in scale carried on MonoRail craneway. Ingredients are weighed into tub for dumping into vats as shown



**Fig. 218C**—Trolley mounted weigh batcher unit for make up and transfer of batch to mixer. This inexpensive unit gives excellent service in brick or concrete plants.



**Fig. 218B**—Interlocking scale section on special frame mounted on trolleys for operation along narrow runways. Loads can be weighed at any point.



**Fig. 218D**—Power operated transfer unit with built-in scales for make-up of charge in cupola charging buckets carried on electric hoist. Automatic weight limit signals can be arranged for speed and accuracy.



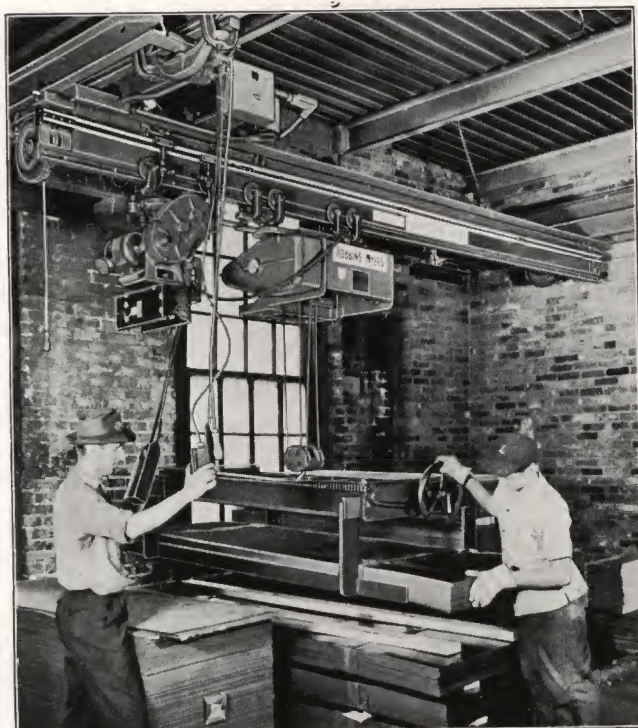


Fig. 219A—Finger-tip control spots MonoTractor crane and hoist unit for deposit of sheet steel by special grab.

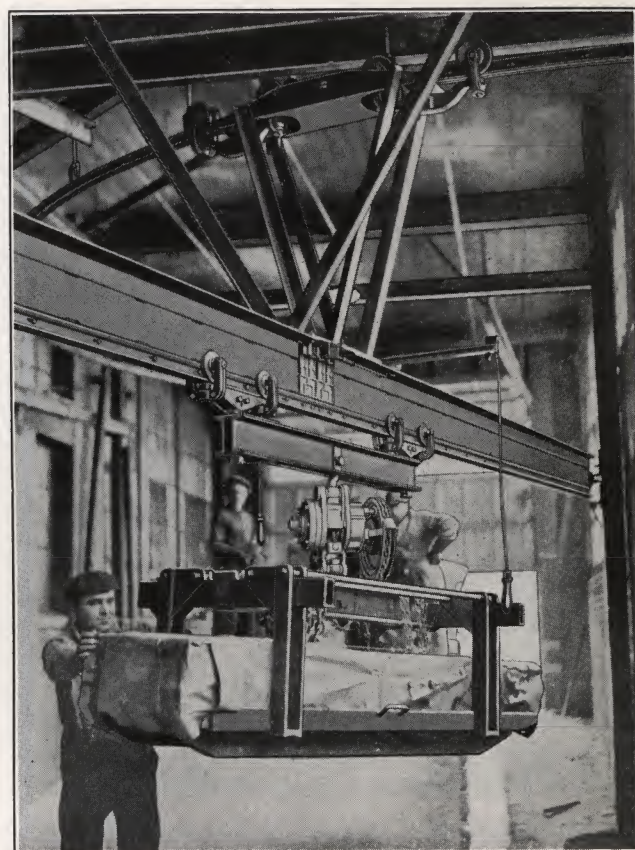


Fig. 219B—Swinging crane interlocked with spur track into building. Special grab picks up 3 ton bundles with chain hoist from truck in receiving dock.

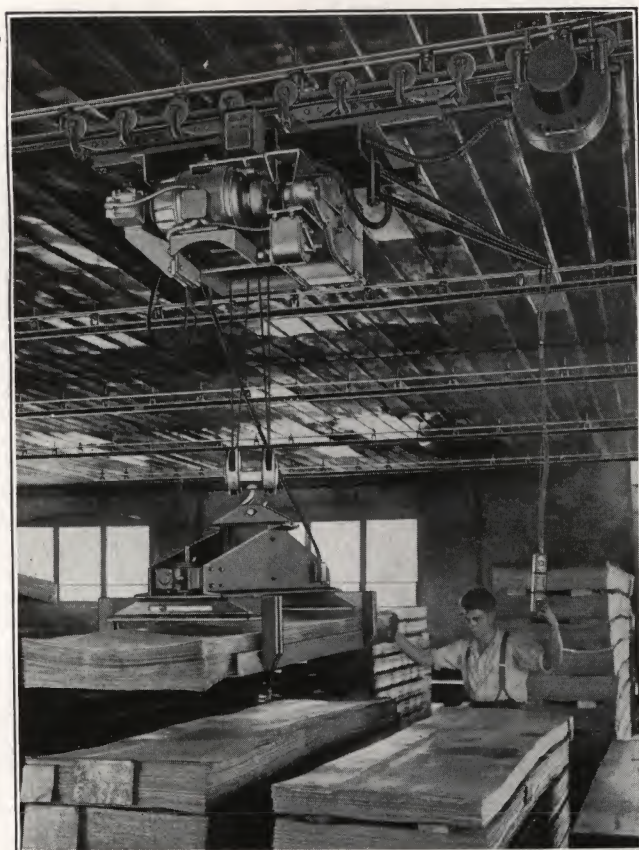


Fig. 219C—Fingertip control of both vertical and horizontal movement permits accurate spotting of sheet steel loads. MonoTractor, electric hoist and electric grab operate from push button switch on swinging arm.

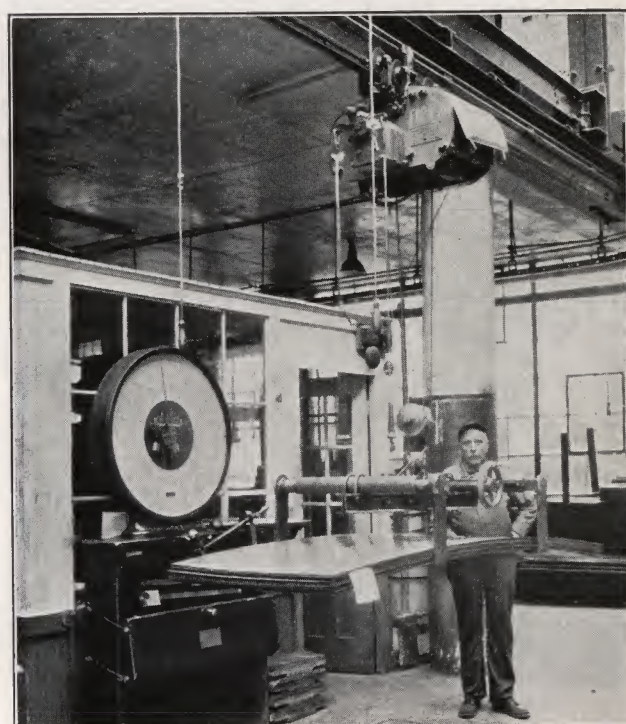


Fig. 219D—Hand wheel operates screw type grab handling sheets singly or in unit loads. Electric hoist also used for other handling operation.





Fig. 220A—Hand chain operated roll grab with rubber faced side pads mounted with swivel to permit turning of roll when suspended.

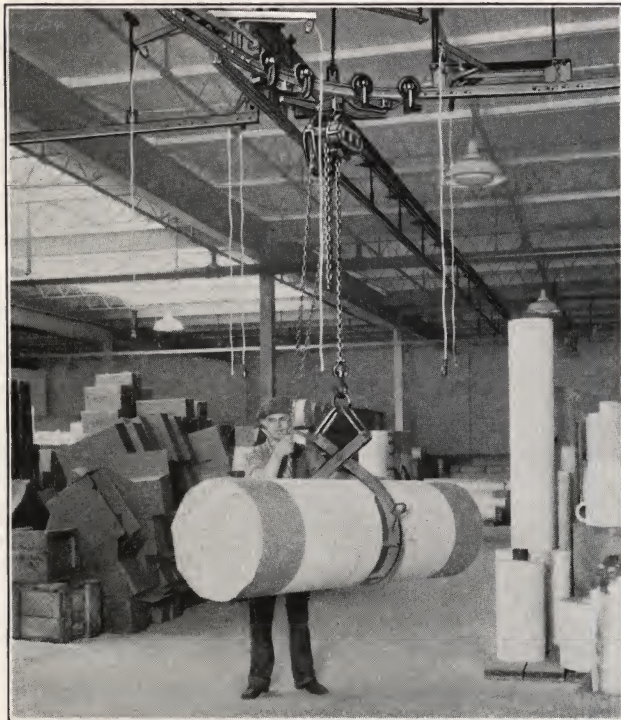


Fig. 220C—Tong type roll grab eliminates damage to surface of roll and permits handling of variety of sizes with speed and safety.



Fig. 220B—Showing application of No. 1460 adjustable Roll Grab with chain hoist. One man handles and turns these 1200 lb. rolls with ease.

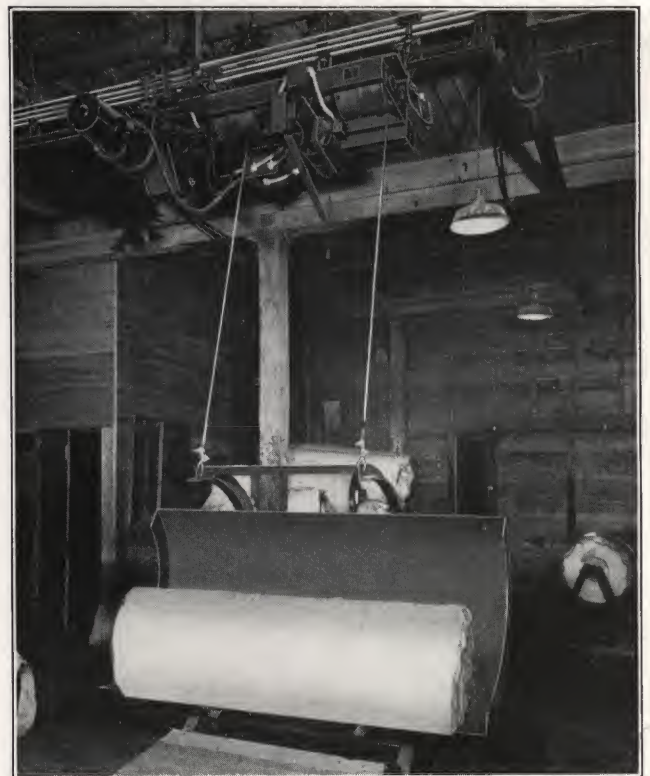


Fig. 220D—Automatic cradle carrier for transportation of heavy rolls. Unloads by lowering against tipping bar. Unit shuttles between two points by automatic controls.





Fig. 221A—Racks for handling saggars from press room through the baking ovens. Two four-wheel trolleys carry the load.



Fig. 221B—Stove parts removed from enameling conveyor are placed on racks for transportation through driers. This system saves expensive storage area.



Fig. 221C—Showing No. 1458 Removable Pallet Rack with pallets in place. Rack is also removable from trolleys for storage or process through ovens.

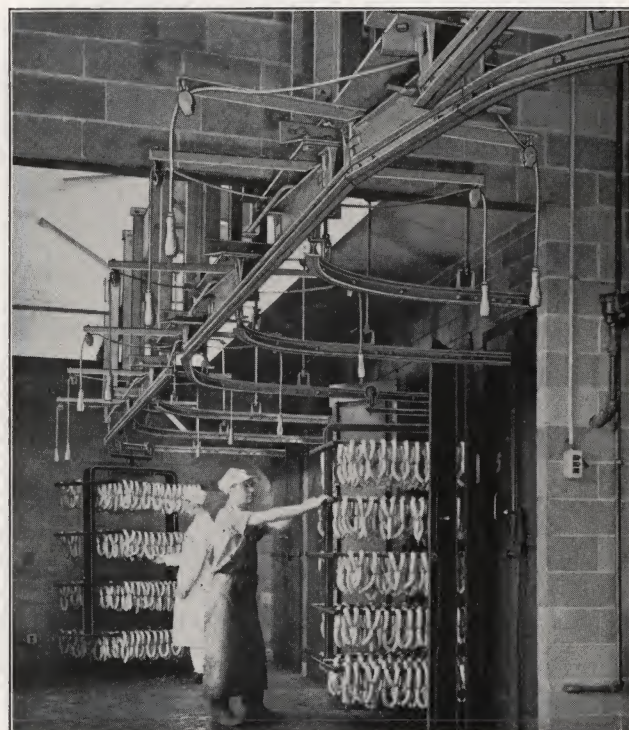


Fig. 221D—Racks carry sausages through cleaning, cooking and smoking processes. Switches and track allow access to various chambers for each operation.



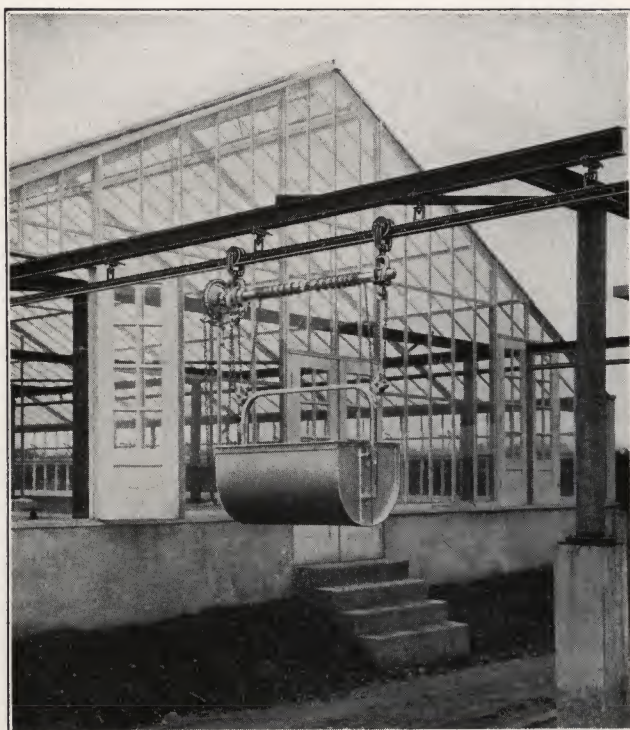


Fig. 222A—Twin hook hoist with side dumping bucket for removal of sludge from drying beds in greenhouse. Track extends over driveway for dumping into trucks.

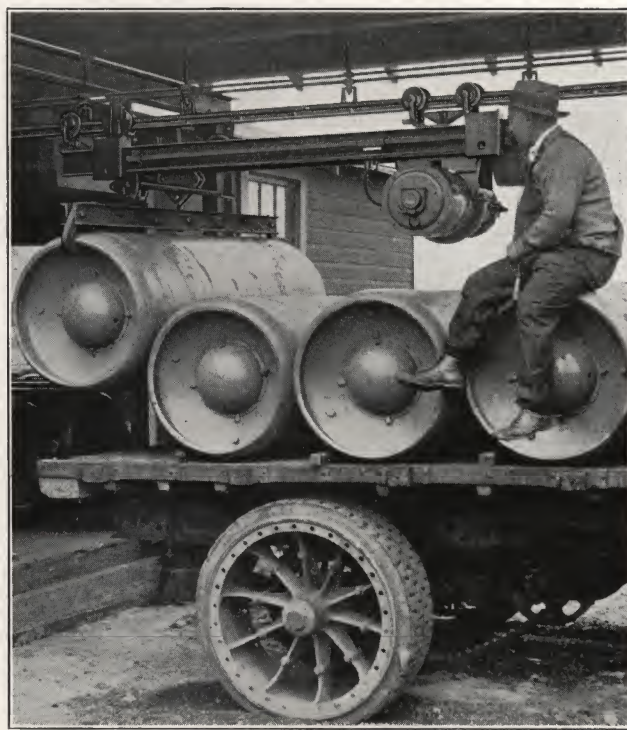


Fig. 222B—Special hoist hook-up and grab close headroom operation. Heavy drums of chlorine are handled throughout pumping station of municipal water department.

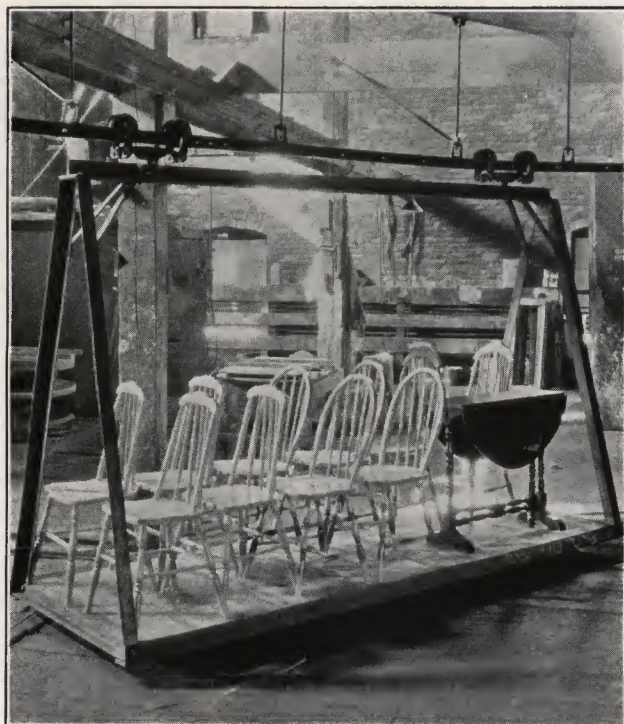


Fig. 222C—Special carrier for handling furniture through finishing process—eliminates danger of damage en route.



Fig. 222D—Special frame on MonoRail crane permits handling of heavy molds to racks. Crane covers entire area allowing operation of frame in two aisles.



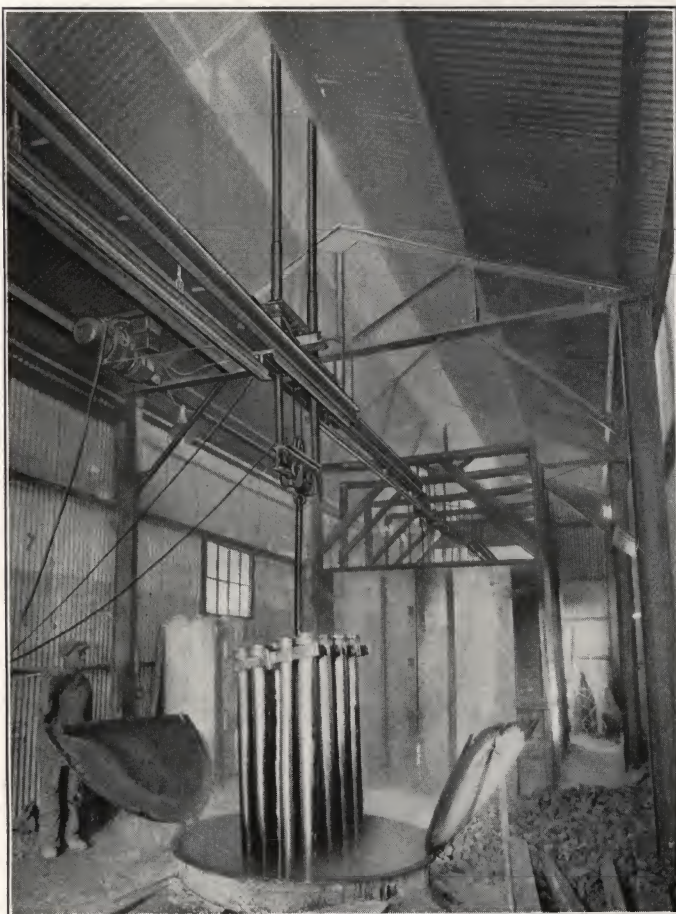


Fig. 223A—Coating of cast iron pipe performed by electric hoist operated dipping machine with plunger type guides.



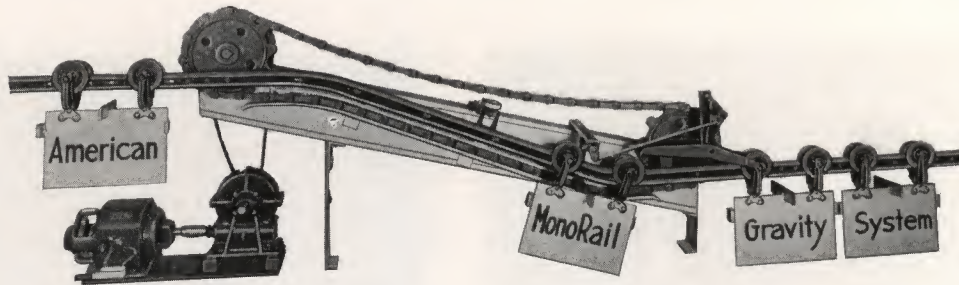
Fig. 223B—Air cylinders operate these dip sections for inspection of assemblies in an electrical refrigerator plant.



Fig. 223C

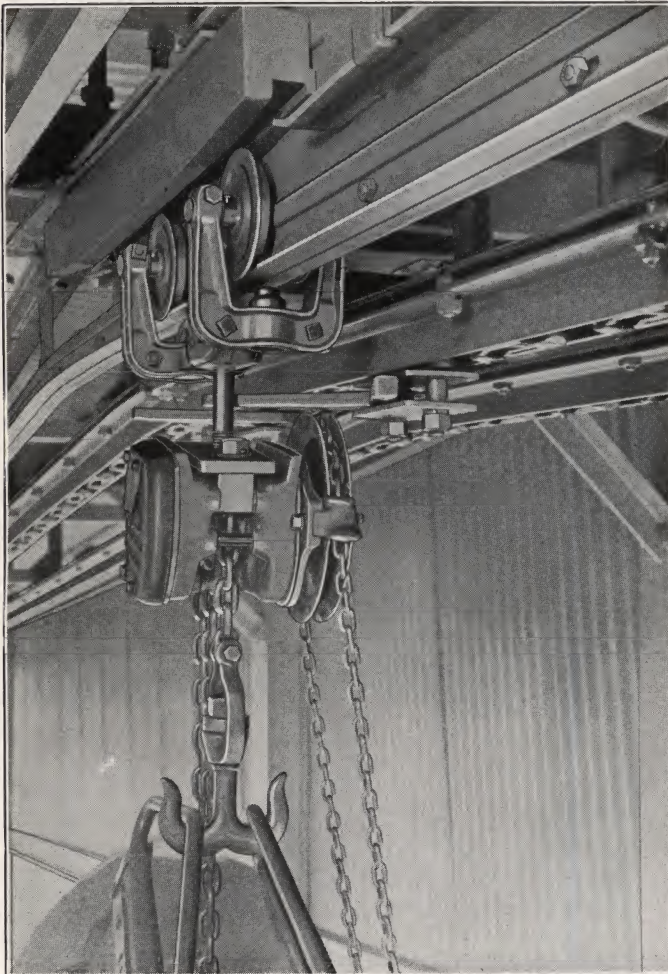
Fig. 223C—Low end of two level gravity conveyor system. Carriers are pushed along 500 ft. system between grinding machines for various operations. At other end an electric hoist raises empty carriers to upper level where they roll to drop section shown.



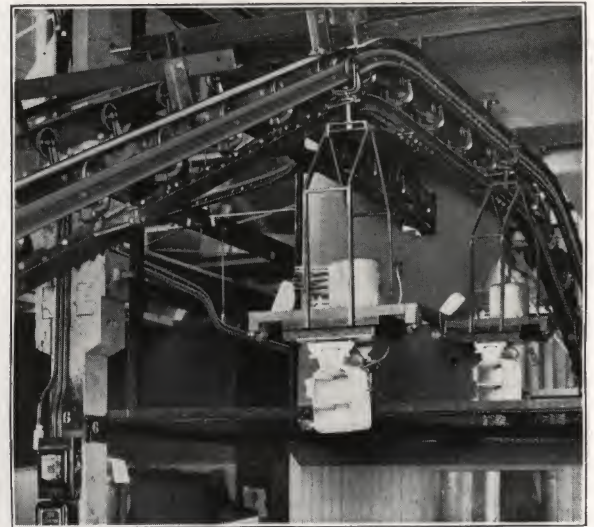


## Booster and Gravity Trolley Systems

Manufacturing processes often will not permit the uniform and constant flow of materials in process as is obtained with chain driven trolleys. Other methods must be used when independent handling of loads is necessary at certain points in a system, or storage on the moving line is impractical. Also the first cost and upkeep of a chain driven system may not be justified



Showing automatic engagement of the spring equipoise dogs with suspension bar on trolley unit. Note spring brake above wheels holding trolley in position until engaged by booster.



Loaded carriers in the production line must sometimes pass over obstructions or to avoid aisles. Booster system takes these trolley units over all such points as illustrated.

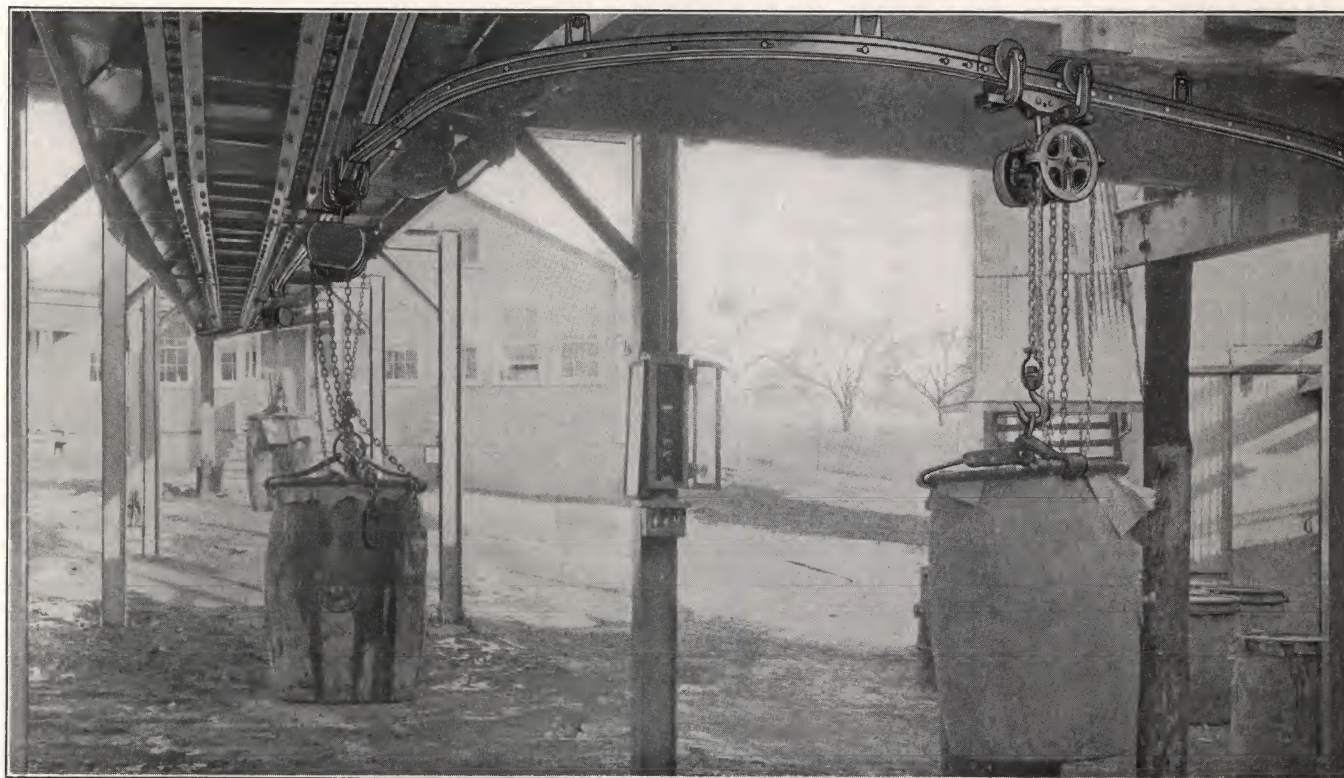
where only a section of the MonoRail system requires mechanical movement of the loads.

Boosters or combinations of gravity runs with boosters will often apply in such cases. Boosters also apply where there is a difference in track levels, and the number of loads to be moved from one level to the other is too great to make a standard lift practical. In some instances uniform regular movement of trolleys is necessary only at certain points for assembly, dipping, drying or processing while at other points the loads must be handled independently. Gravity runs may often be introduced into the system to carry the loads from point to point as required.

Systems of this kind allow for shunting loads to several lines where desirable for classification, assembly or storage, or to provide for possible interruptions at any point in the line of flow without disturbing the manufacturing system.

American MonoRail engineers have developed a special escapement mechanism for feeding trolleys into boost-





Motor operated switch provides intermediate discharge of loads midway between ends of a 289 foot booster system for conveying 600 pound drums in either direction.

ers. It is automatic in operation and eliminates feeding of the trolleys into the boosters by hand. It provides for conditions where the loads are heavy, light or variable, and where there are many or few trolleys waiting to enter the booster. The combination of pusher and feeder has greatly extended the usefulness and savings possible with gravity runs of MonoRail as trolleys may be carried by gravity for a considerable distance from the last handling point, and do not have to be watched or fed by hand into the booster.

Return of empty carriers to the point of origin after the load has been removed is a common application of boosters and gravity lines.

No general rules can be made governing the slope required for trolleys to operate on sloping track. This depends upon the type of trolley and the size, weight and hookup of the load. Some trolleys may require a quarter inch slope to the foot while others may run easily with one-sixteenth of an inch slope per foot of rail. Curves require more drop than straight rail. Considerably less slope is necessary after a system is "worn in" than is required when the system is "brand new." It is usually possible to anticipate the slope required when the type of load and trolleys are known. The system can later be adjusted to the exact slope required by using the thread adjustment on hanger bolts. MonoRail engineers will co-operate in booster and gravity layouts upon request.



Booster for transportation of loads between buildings on side of hill. System doubles handling capacity and eliminates maintenance of narrow gauge surface track.





## Finishes on MonoRail Equipment

The standard finish on MonoRail equipment is a dark green enamel. This finish was selected because of its proven virtue as a lasting protective covering for metals exposed to the widely varying atmospheric conditions that obtain in many industries.

The formula is one of high grade, long oil varnish in combination with chemically pure tinting colors. It is water-proof and fume-resisting.

Where painting in special color is required, the same high-grade materials will be used, and an extra charge will be made to cover the actual expense.

### Acid Resisting Finishes

To protect equipment subject to corrosive influences we advise finishes that meet each particular condition.

Ordinary acid fumes are repelled by a covering of Du Pont Kromate paint which has proven under service to have long wearing qualities.

Extreme corrosive attack requires metallic protection and for this purpose it is possible to have equipment undylited, galvanized or coated with similar finishes. An American MonoRail engineer, after a study of such unusual conditions, will recommend and submit estimates on the cost of special treatment where it is required.

## Trolleys Equipped With Special Wheels

Trolleys operating in the presence of explosive dust or gas can be equipped with wheels of special material such as bronze, aluminum, or bakelite. Sparking is thereby eliminated.

Fibre wheels are sometimes applied for use on in-

stallations where minute steel particles dislodged by steel wheels would be injurious to the product being manufactured.

As a complete protection against explosion both track and wheel equipment can be furnished in bronze or aluminum.

## Aluminum Equipment for Lightness

Out of its broad experiences in certain of the process industries such as rayon and the like, the American MonoRail Company developed track, switches and trolleys fabricated entirely from aluminum.

Track is assembled from extruded sections of special analysis aluminum having an extremely heavy wearing flange for travel of wheels. Strength of such equipment is approximately that of mild steel.

Trolley wheels are specially constructed with stainless steel hubs and aluminum treads. Trolley yokes, load

bars, suspension hangers and all other load bearing members are aluminum forgings.

Such equipment, while offering ample load bearing strength for continuous service, meets all those situations where extreme lightness in dead weight of the handling system is essential.

Aluminum equipment also serves as a complete protection against acid or corrosive atmospheric conditions. Recommendations and prices will be furnished on request.



# Engineering Data Section

This section contains information essential to the design of an American MonoRail system. It includes load tables, dimension details and suggestions supplementing the information given with catalog items illustrated elsewhere.

When full information is furnished according to recommendation on the following page, the American MonoRail Company will design the system and submit a complete proposal with quotation covering the equipment necessary for complete installation.

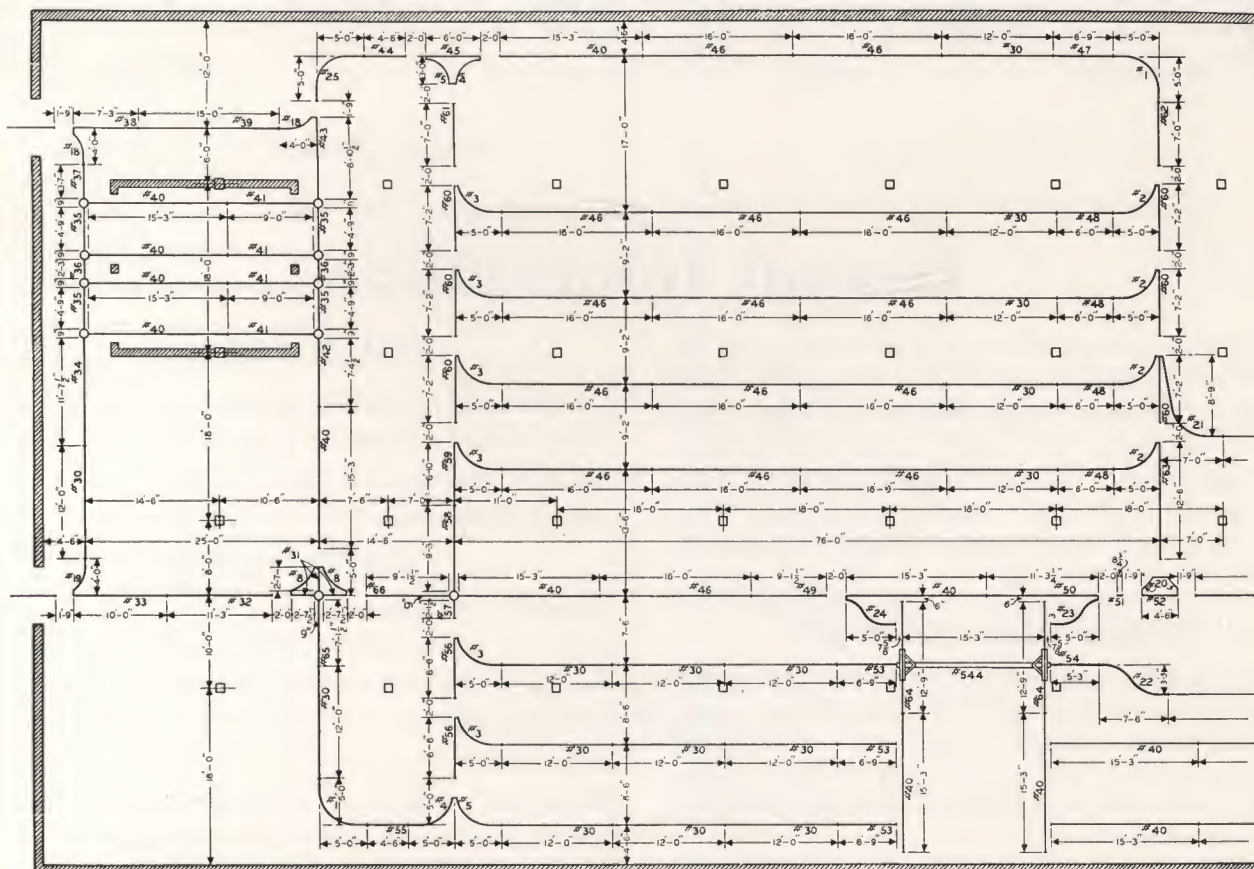
## FABRICATION AND ERECTION DRAWING

When an order is received with the necessary dimensions, the American MonoRail Company fabricates the MonoRail system without extra charge. With each system a layout plan, as illustrated below, is furnished, showing the location, by number, of every section of rail in the system. Corresponding numbers are painted on each section when fabricated, thereby simplifying erection and eliminating costly fitting, cutting and bending in the field.

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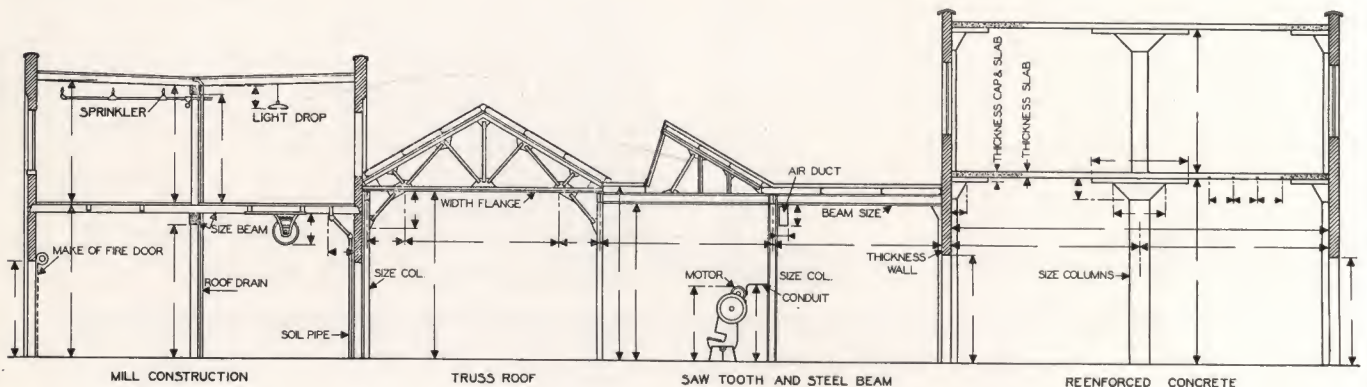
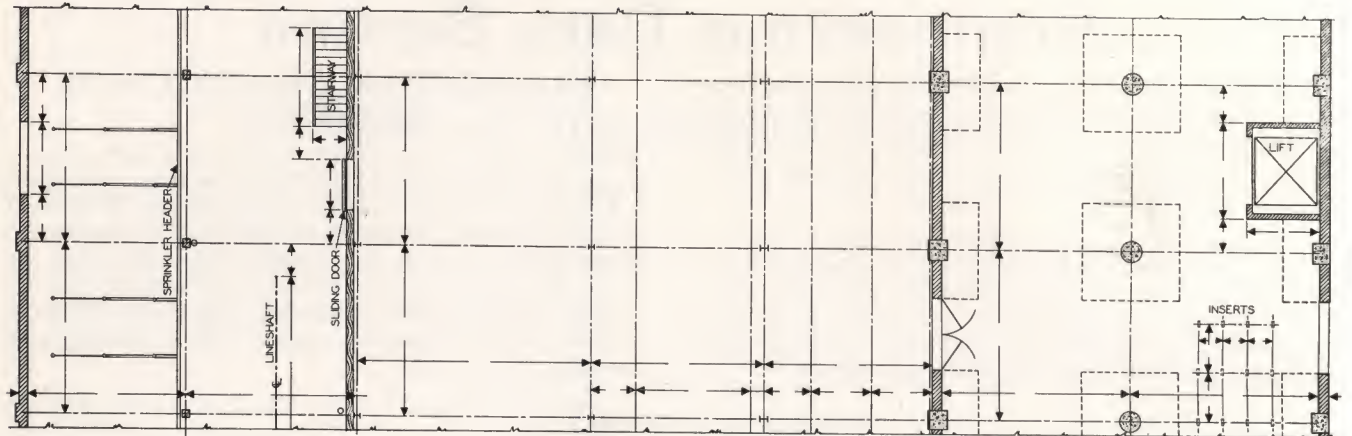
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Typical track layout plan furnished with every handling system.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## Layout Information

At the time measurements are taken for track layouts all following points must be noted for possible interference: machinery, piping, conduit, air ducts, down spouts, line shafts, belting, knee braces, column caps, door lintels, fire doors, low beams and arches. Clearances should be checked along all the track lines to see that carriers will pass without striking particularly on curves and near columns.

### BEAMS AND COLUMNS

When a building plan is furnished for making layouts, the location, size and height of all supporting beams or lower chords of trusses should be given. Measurements to columns and column lines should be taken to the center line of columns or indicated plainly if measured otherwise.

### TRACK HEIGHT

Desired height of the track above the floor should be noted. Where a variation exists in floor level or where rail is to be suspended under a sloping roof, this must also be indicated.

### TOTAL LOADS

Weight of the maximum load to be carried together with the equipment desired for complete carriers should be furnished so that the total load and its distribution over any single span in the system can be determined.

See opposite page for further layout requirements and page 232 for minimum switch clearances.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



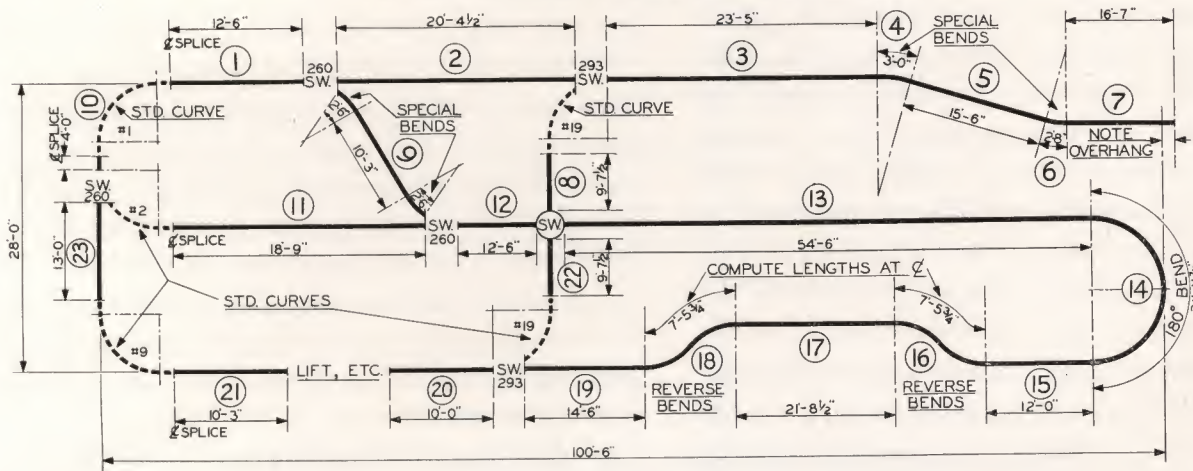
# Measuring Up a MonoRail Layout

The track footage shall be the actual net footage required. Track required in standard curves, switch tongues, turntables, scale and lift sections, etc., shall not be included, since these short sections are included in the price of such items. Curves varying in any detail from those shown and numbered in the catalog, should be treated as special curves and their length added to the track footage. A bending charge as given

in the price list must be added for all special curves.

Below is a sample layout. Footage of each straight track and each special curve is listed to determine the total track footage. Fractions of feet should be used in the individual lengths of track to compute the grand total. When ordering, however, list any fraction as a full foot in the total track footage ordered.

TRACK FOOTAGE COMPUTATION EXAMPLE



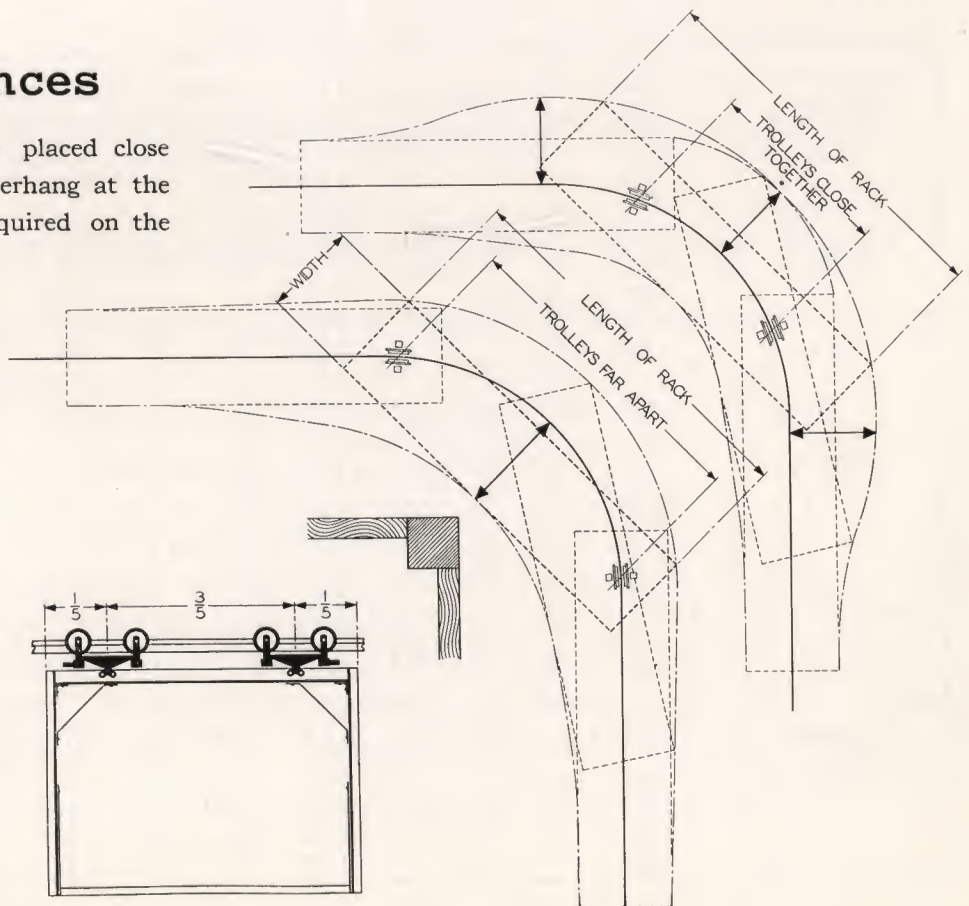
- ① 12'-6"
- ② 20'-4 1/2"
- ③ 23'-5"
- ④ 3'-0"
- ⑤ 15'-6"
- ⑥ 2'-8"
- ⑦ 16'-7"
- ⑧ 9'-7 1/2"
- ⑨ 15'-3"
- ⑩ 4'-0"
- ⑪ 18'-9"
- ⑫ 12'-6"
- ⑬ 54'-6"
- ⑭ 21'-11 1/8"
- ⑮ 12'-0"
- ⑯ 7'-5 3/4"
- ⑰ 21'-8 1/2"
- ⑱ 7'-5 3/4"
- ⑲ 14'-3"
- ⑳ 10'-0"
- ㉑ 10'-3"
- ㉒ 9'-7 1/2"
- ㉓ 13'-0"

TOTAL 336'-8 3/4"  
ORDER 337'-0"

## Rack Clearances

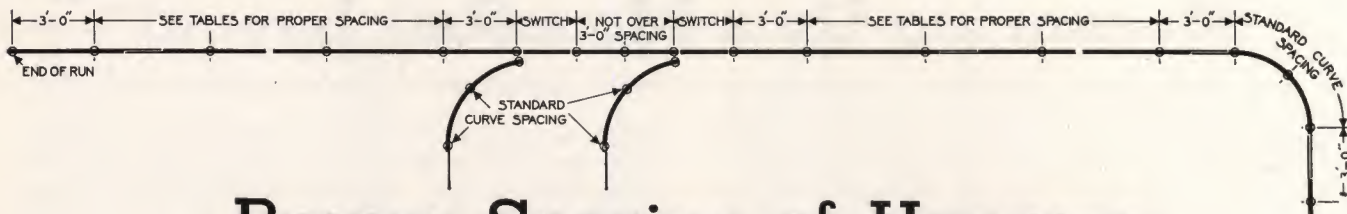
When trolleys on a rack are placed close together allowing considerable overhang at the ends, more rack clearance is required on the outside of the curve in a Mono-Rail layout. When trolleys are placed near the ends of the rack, it increases the clearance requirement on the inside of the curve. These two conditions are illustrated graphically in the drawing at the right.

It may also be noted that when the trolleys are closer together the stress is increased in the top beam of the rack. Usually trolleys may be placed about one-fifth or one-sixth of the length of the rack from the end.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## Proper Spacing of Hangers in Standard MonoRail

Location and spacing of suspension points for supporting MonoRail track and switches should be given every possible consideration in order to attain the greatest degree of safety together with a perfectly horizontal runway eliminating irregular grade effects caused by slight deflections in the rail. Adherence to spacing given in the table below as well as the suggested location of hangers indicated in the diagram at the top of this page will assure permanent support for the loads to be carried. Spacings have been accurately determined so that in no case will deflection in the rail

between hangers exceed  $1/250$ th of the span nor will the load on any one bolt exceed 2500 pounds.

Note that the data given includes spacings for systems where one, two, three, four or more trolleys may be used. Where conditions make possible the concentration of two or more trolleys such loading must be considered and the proper hanger spacing provided.

In planning a system it will be advantageous to provide for any possible future increase in load conditions and provide support for such loads at the time of original installation.

**TABLE OF HANGER SPACING FOR STANDARD MONORAIL**

	TROLLEY LOADS	CATALOG NUMBER OF TROLLEY	ONE TROLLEY ONLY	TWO TROLLEYS	THREE TROLLEYS	FOUR OR MORE TROLLEYS
Aggregate Distributed Load	250	Closely Placed Wheel Loads Evenly Distributed	<i>These hanger spacings are for straight runs. Spacings at curves and switch connections should be as shown above and in curve charts on pages 236 to 239. Hangers should be arranged to come within one foot either way from the center of lap splices.</i>			10
	500					10
	1000					8
	1500					6
	2000					5
	2500					4
	3000					$3\frac{1}{2}$
Two Wheel Trolleys	250	No. 188 No. 150 No. 157-179	10	8	6	5
	500		8	5	4	4
	750		6	4	$3\frac{1}{2}$	3
	1000		5	4	3	3
Four Wheel Trolleys	250	No. 189	10	8	7	6
	500		8	5	$4\frac{1}{2}$	4
	500	No. 165-162	8	6	$4\frac{1}{2}$	5
	750		7	5	4	4
	1000		6	4	4	4
	1250	No. 162	$4\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
	1500		4	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
	1000	No. 180	6	4	$3\frac{1}{2}$	$3\frac{1}{2}$
	1500		$4\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
	2000		4	$3\frac{1}{2}$	3	3
Eight Wheel Trolleys	1000	No. 175-171	7	5	5	5
	1500		6	5	5	5
	2000		5	4	4	4
	2500	No. 171	4	4	4	4
	3000		$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
	2000	No. 181	5	4	4	4
	2500		$4\frac{1}{2}$	4	4	4
	3000		4	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
	3500		$3\frac{1}{2}$	3	3	3
	4000		3	3	3	3

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Truss and Girder Rail

The general description of Truss and Girder Rail on pages 46 and 47 is supplemented on this and the following two pages with load tables and other information of value in making layouts.

Truss and Girder Rails are furnished in straight sections only. Length of sections and width of top flange must be specified when ordering. Outlines in Figure 231 show the assemblies available for various track connections. They should be designated by the number given for convenience in specification. When furnished for overlapping splice, sections are measured from center of lap as indicated. Standard and wide flange sizes are interchangeable, the wide flange being stronger and especially adapted to longer spans.

Considerable advantage may be gained by the use of Truss and Girder Rail where the layout will allow continuous beam construction as in crane runways.

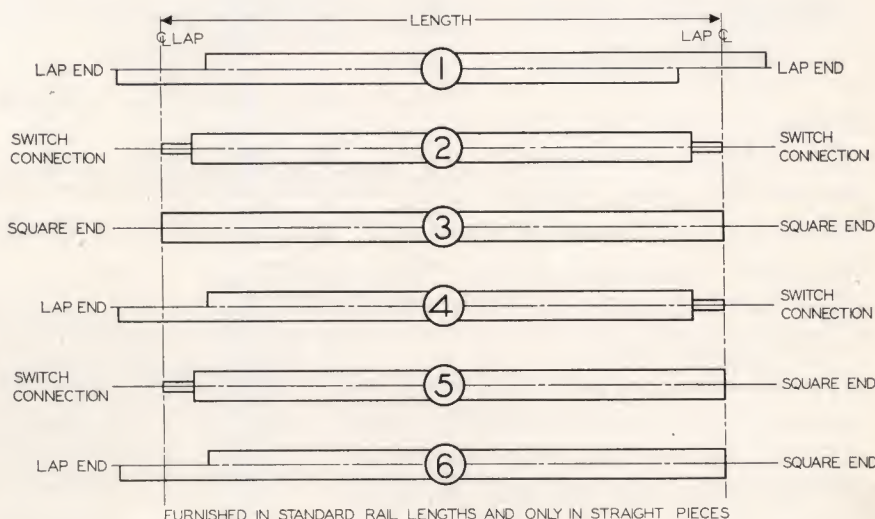


Fig. 231

Lap splices give adequate support to connecting sections making it unnecessary to support the splice at connecting points. Splices can be made as far from the support as  $\frac{1}{8}$  of the span. There should never be two splices in any one span. Careful placing of joints to avoid waste in cutting fractional lengths will eliminate the necessary charge for the next even foot length.

## Load Table for Standard Truss and Girder Rail

Concentrated Loads

Laterally Free

No. of Rail	Weight Per Foot	Upper Flange Width	Section Modulus	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
434	12.7	4"	6.45	5380	4235	3105	2315	1720	1240						
434	13.5	5"	6.58	5495	4385	3655	3130	2660	2110	1650	1300				
411	14.9	5.19"	7.11	5925	4740	3950	3385	2960	2430	1915	1510				
411	16.7	6.19"	7.24	6030	4825	4020	3445	3115	2680	2410	2190	1815	1490		
417	18.0	6.19"	10.59	8825	7060	5880	5040	4410	3920	3530	3100	2540	2085		
417	22.0	7.19"	10.98	9150	7320	6100	5230	4575	4065	3660	3330	3030	2815	2610	2350
424	23.4	7.19"	14.73		9820	8180	7015	6140	5455	4910	4460	4090	3775	3505	3070
424	25.5	8.19"	14.85		9900	8245	7065	6185	5500	4950	4500	4125	3805	3535	3300
431	27.1	8.19"	20.20				9630	8420	7490	6735	6125	5615	5185	4815	4490
431	29.1	10.19"	20.61				9820	8590	7640	6875	6250	5730	5290	4910	4580

Ratio of 1/b to right of dotted line are over 40; to right of heavy line are over 50.

Such loadings should only be used with extreme care.



# Truss and Girder Rail (Continued)

## CLAMP AND BOLT SUPPORTS

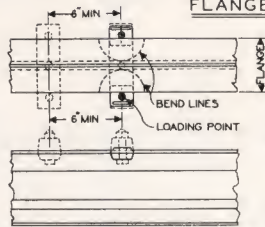
Strength of the supports where beams or rails are suspended from flange clamps may be governed by the rod, the clamp or the beam flanges. When a single clamp support is not strong enough two may often be used.

The supporting strength of flat flanges on built up sections where clamps are used depends upon the thickness of the flange. See Fig. 232A. The tabulation gives the carrying capacities for a single clamp on flanges of various thicknesses. Figure 232A also gives the carrying capacities of No. 479 and No. 480 flange clamp for different width flanges. Allowance is made for a large factor of safety. The load carrying capacities of bolts are given at the right of the same diagram.

Bolted connections are often used when Truss or Girder rail may be placed directly against supporting beams. Time is saved in erection by using clamping

### FLANGE STRENGTH UNDER CLAMPS

FLANGE THICKNESS	MAXIMUM CLAMP LOAD
1/4"	700
3/8"	1570
1/2"	2800
5/8"	4370
3/4"	6280
7/8"	8500
1"	11600



NOTE...USE TWO CLAMPS WHERE LOADS ARE GREATER THAN CAPACITIES SHOWN. PLACE CLAMPS 6 IN. OR FURTHER APART.

### CAPACITIES OF CLAMPS NO. 479, AND NO. 480, ON VARYING FLANGES

FLANGE WIDTH	3 3/4"	4"	5"	5 1/2"	6"	6 1/2"	7"	7 1/2"	8"
479	3920	3110	2380	2130	WILL NOT TAKE THESE FLANGES				
480	4570	3630	2780	2480	2250	2050	1890	1750	1630

NOTE...WHEN HANGER ROD IS USED THROUGH CLIP THERE IS LITTLE STRESS IN THE CLAMP AND THE STRENGTH OF THE HOOKUP IS GOVERNED BY FLANGE OR BOLT

SIZE OF BOLTS	STRENGTH OF BOLTS
1/2"	1520
3/8"	2420
1/4"	3620
3/16"	5040
1"	6600
1 1/8"	8300
1 1/4"	11000

Fig. 232 A

### SUPERSTRUCTURE BEAM SIZES AND BOLTS

CAT. NO.	DEPTH	KIND	SIZE	FLANGE		Z	SIZE	Z	TENSION	NO. OF BOLTS	GAUGE OF HOLES
				ANGLES	WIDTH						
434	7"	TRUSS	STANDARD	2 X 1 1/2 X 1/4	4"	6.45	7" @ 15.3	10.34	3080 LBS.	8	2 1/4"
434	7"	"	WIDE FLANGE	2 1/2 X 1 1/2 X 1/4	5"	6.58	"	"	3140	"	"
411	7"	GIRDER	STANDARD	2 1/2 X 1 1/2 X 1/4	5.19"	7.11	"	"	3400	"	"
411	7"	"	WIDE FLANGE	3 X 2 X 1/4	6.19"	7.24	"	"	3460	"	"
417	9"	"	STANDARD	3 X 2 X 1/4	6.19"	10.38	7" @ 17.5	11.11	4960	"	"
417	9"	"	WIDE FLANGE	3 1/2 X 2 1/2 X 5/16	7.19"	10.97	"	"	5240	"	"
424	11"	"	STANDARD	3 1/2 X 2 1/2 X 5/16	7.19"	14.73	8" @ 20.5	15.05	7000	"	"
424	11"	"	WIDE FLANGE	4 X 3 X 5/16	8.19"	14.93	"	"	7130	"	"
431	13 1/2"	"	STANDARD	4 X 3 X 5/16	8.19"	20.20	10" @ 25.4	24.42	9650	"	12
431	13 1/2"	"	WIDE FLANGE	5 X 3 X 5/16	10.19"	20.61	"	"	11080	"	"

Fig. 232 B

connections which are adjustable to meet building variations.

Detail shown below in Figure 232C gives standard Truss Rail connections for switches or turntables and hole locations for jumper illustrated in Figure 233A.

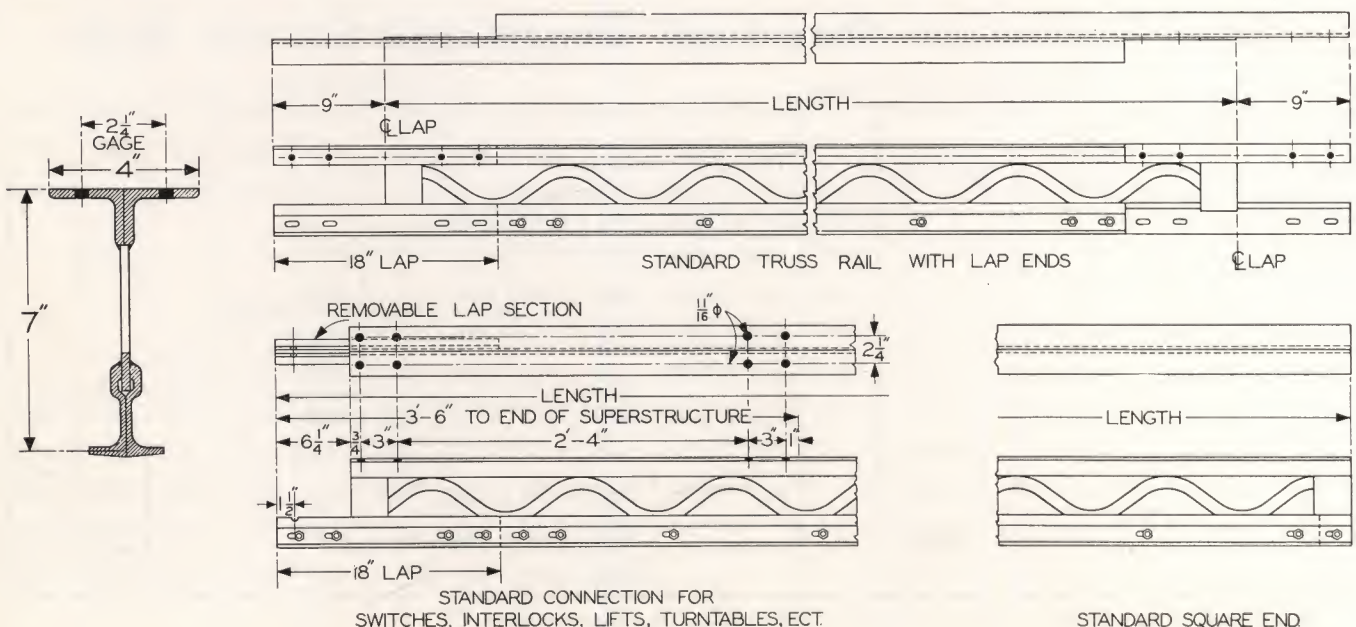
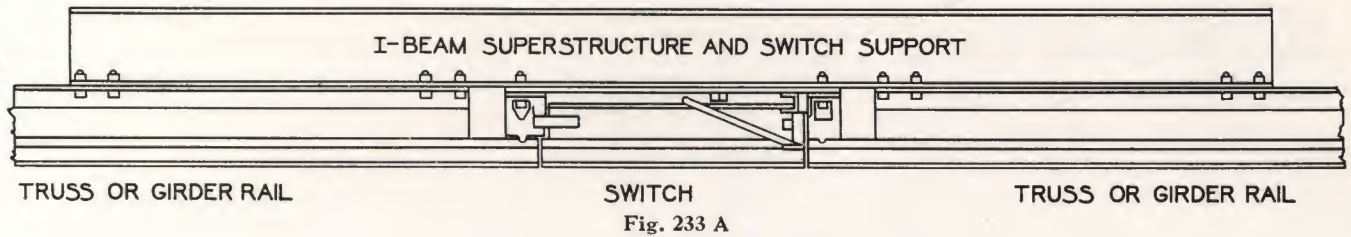


Fig. 232 C

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## Truss and Girder Rail (Continued)

### Connections to Switches and Other Trackage Units

Where switches occur in runs of Truss and Girder Rail, I-Beams may be bolted directly to the flanges of the connecting sections. These beams running over the switches furnish continuous beam strength permitting the use of continuous beam construction past switches on straight runs, and at the same time the beam furnishes direct support for the switches or cross-overs. See Figure 233A.

The location of bolt holes in sections of Truss and Girder Rail which have an end connection for switches and interlocks of various types has been standardized as is shown in the Figures 232C and 233C. All connecting bolts are  $\frac{5}{8}$ -inch which is the size used in the assembly of the supporting steel work.

The tabulation Figure 232B, on the opposite page, shows the proper sizes of I-beam to use over switches with the different sizes of Truss and Girder Rail. The size of flange angles, section moduli of rails and beams with the total bolt tension and number of bolts required for each connection is given. The gauge lines are standard for the beams used in each case.

Detail shown below in Figure 233C gives jumper connection dimensions for standard Girder Rail as applying to the various sizes listed on page 47 in the general catalog section.

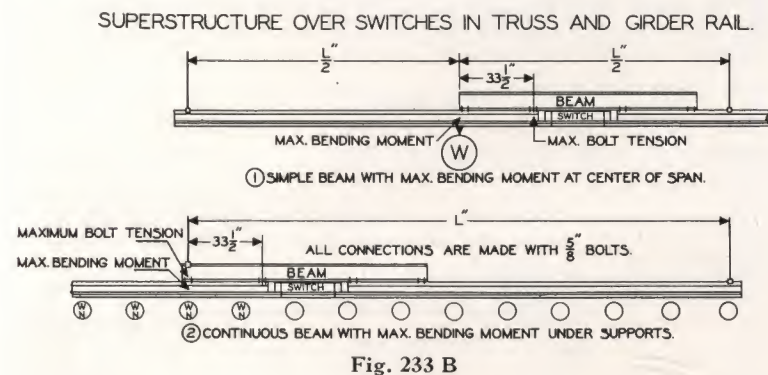


Fig. 233 B

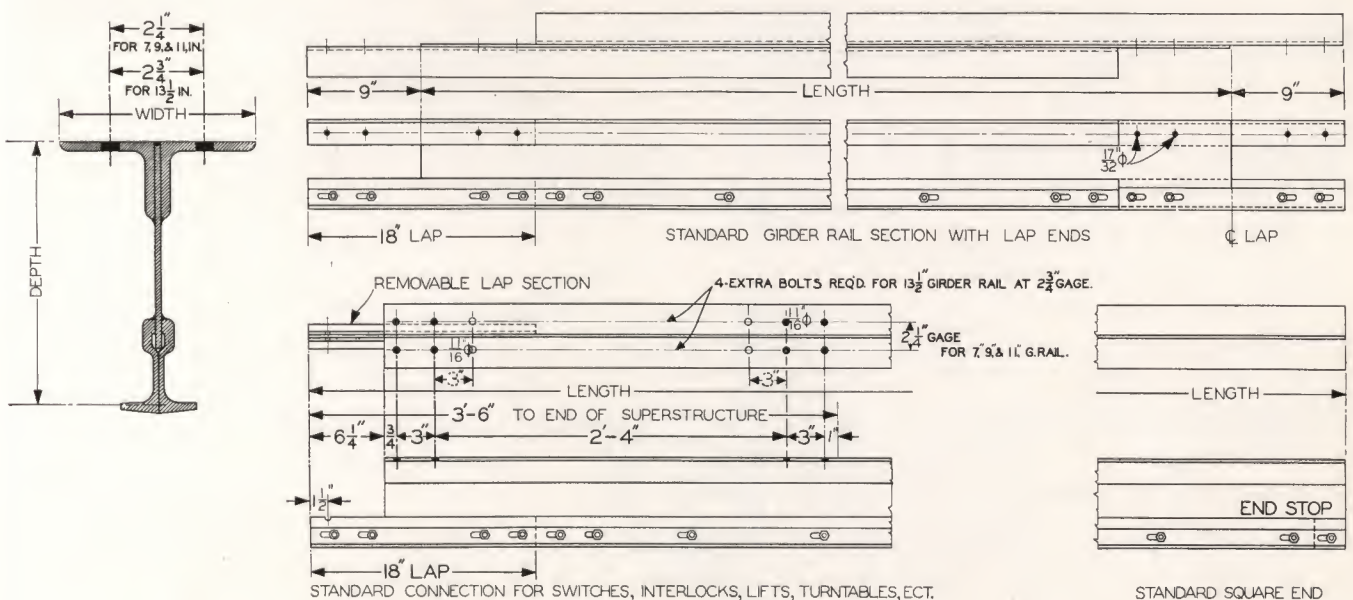


Fig. 233 C

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# RailMaster Data

## Continuous Beam Splice

Figure 234 A shows method of developing continuous beam action under supports with RailMaster Capped Rail as described and illustrated on page 129 in the catalog section.

## SWITCH AND CURVE SUPPORTS

To furnish continuous beam strength and also support for RailMaster Switches, Figure 234C gives complete details, while on the opposite page Figure 235A shows standard supports for both tongue and glide type switch groups illustrated on page 240 and 241. Standardization of bolt locations together with complete dimensional detail is included in both drawings which cover applications to all RailMaster switches. This data facilitates making superstructure and erection cost estimates of the equipment involved.

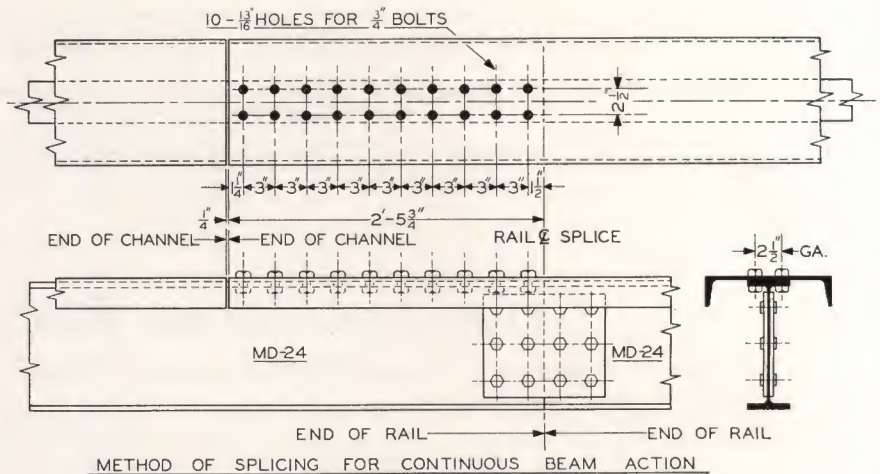


Fig. 234 A

DATA ON RAIL AND JUMPER BEAMS									
MONORAIL SECTION					JUMPER 3/4\" BOLTS				
SECTION NO.	COVER CHANNEL	WT PER FOOT	DEPTH INCHES	I	n	Z TOP	Z BOTTOM	EQUIVALENT BEAM	Z
MD-1	25\"	25.5	12.42	174.2	6.21	28.1	28.1	12\"x6 1/2\"-25	30.9
MD-22	10\"@8.8	33.8	12.60	245.7	7.78	51.1	31.6	12\"x6 1/2\"-28	35.6
MD-23	12\"@10.6	35.6	12.60	256.7	8.07	56.2	32.0	\" \" \"	\"
MD-24	12\"@20.7	45.7	12.68	288.7	8.81	74.6	32.8	\" \" \"	\"

Fig. 234 B

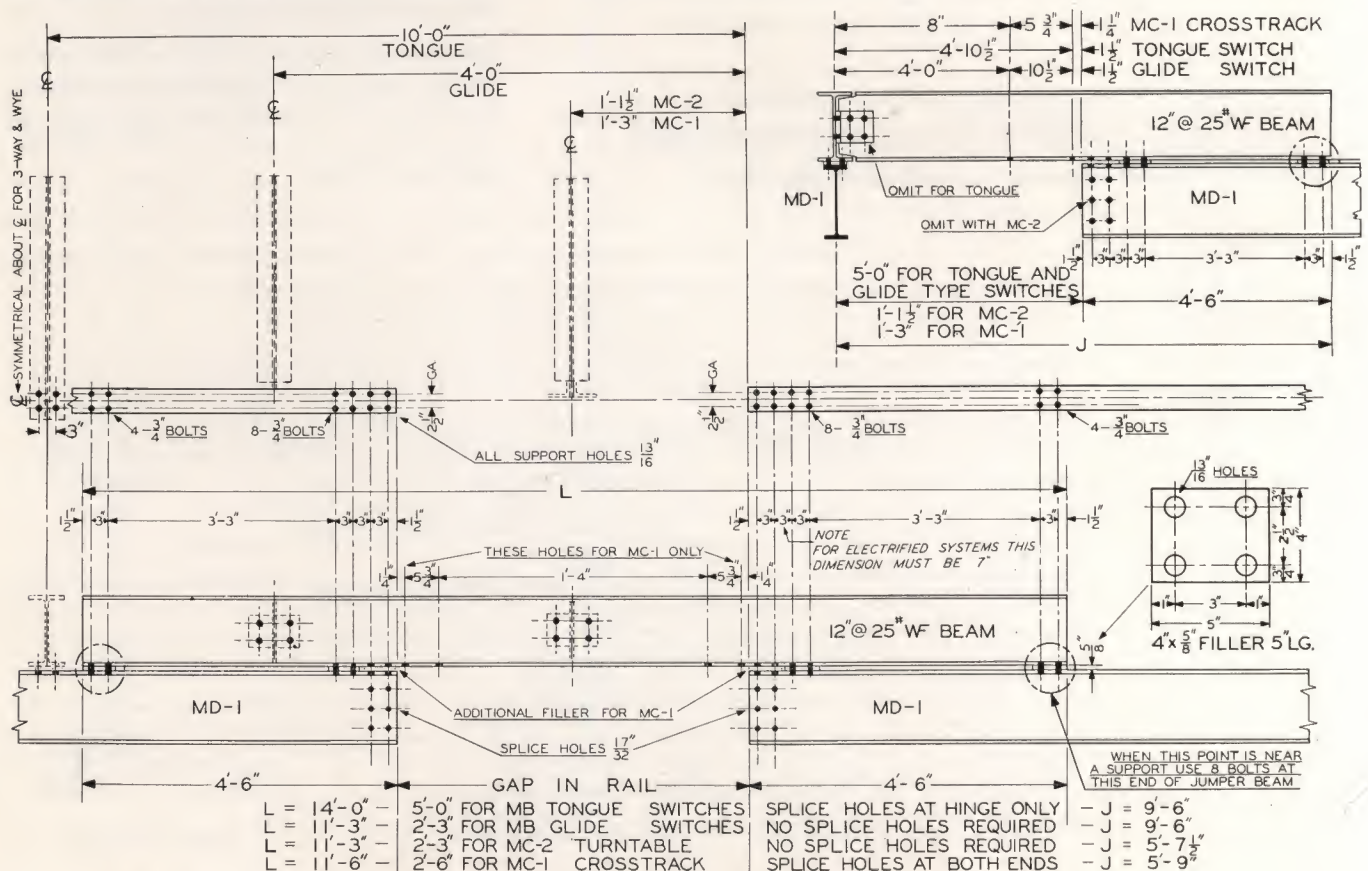


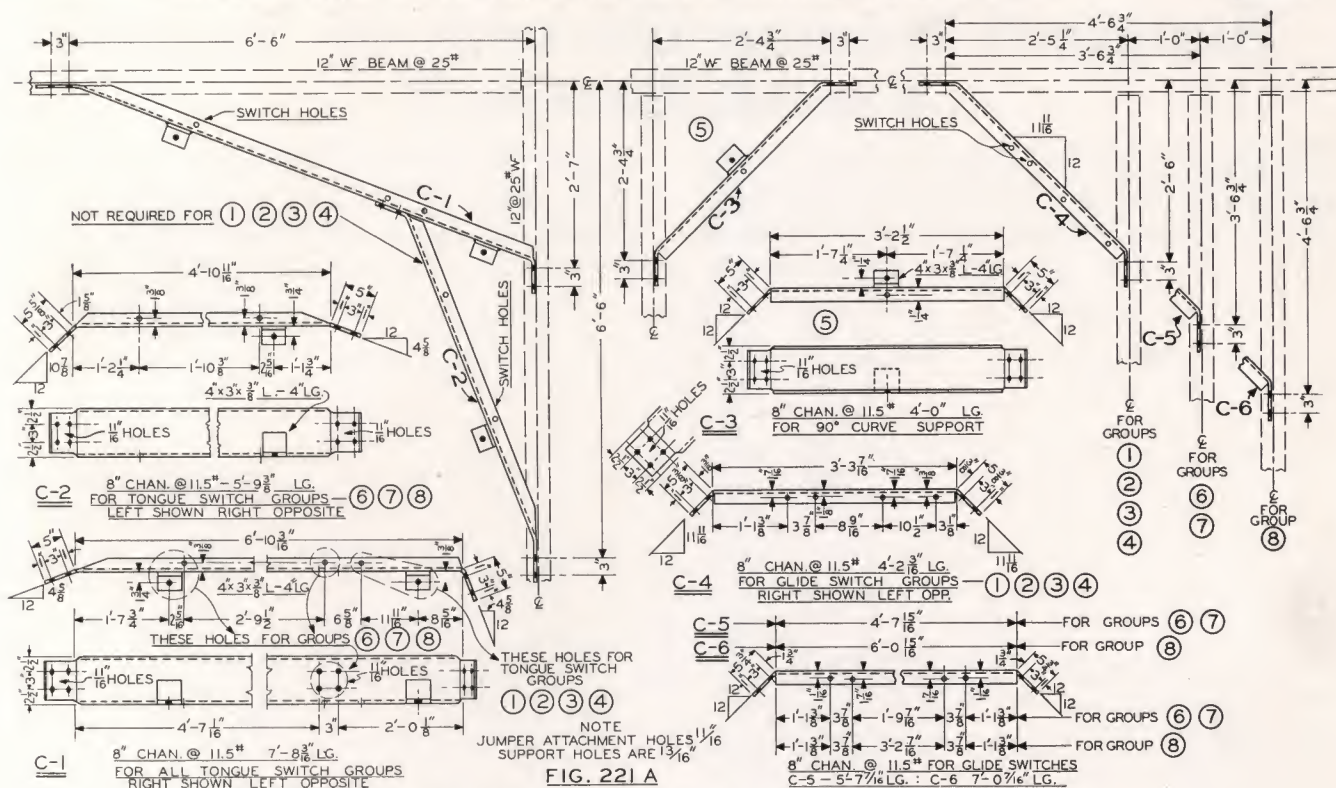
Fig. 234 C

## CONNECTION DETAILS FOR JUMPER BEAMS OVER SWITCHES & TURNABLES

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# SWITCH AND CURVE SUPPORTS FOR RAILMASTER TRACK



## MINIMUM SPACING OF RAILMASTER SWITCHES

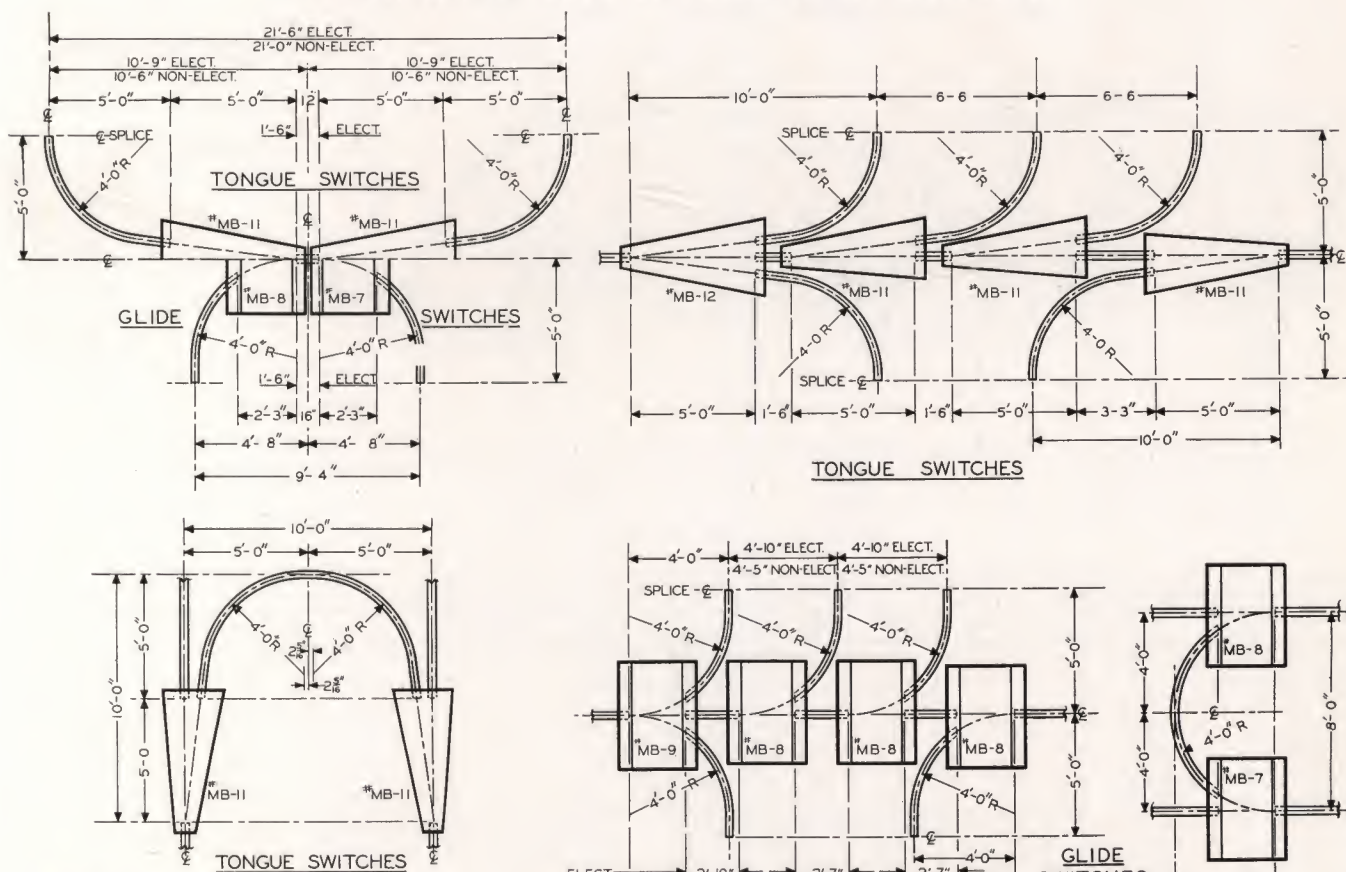


Fig. 235B

## MINIMUM SPACING OF STANDARD SWITCHES FOR DIFFERENT ARRANGEMENTS

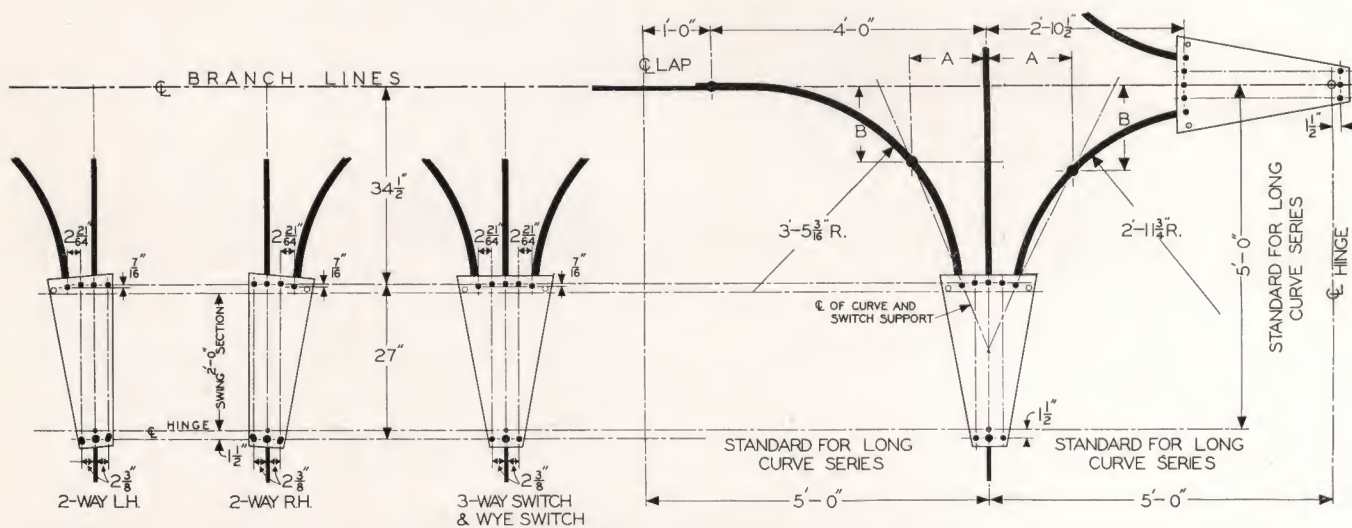
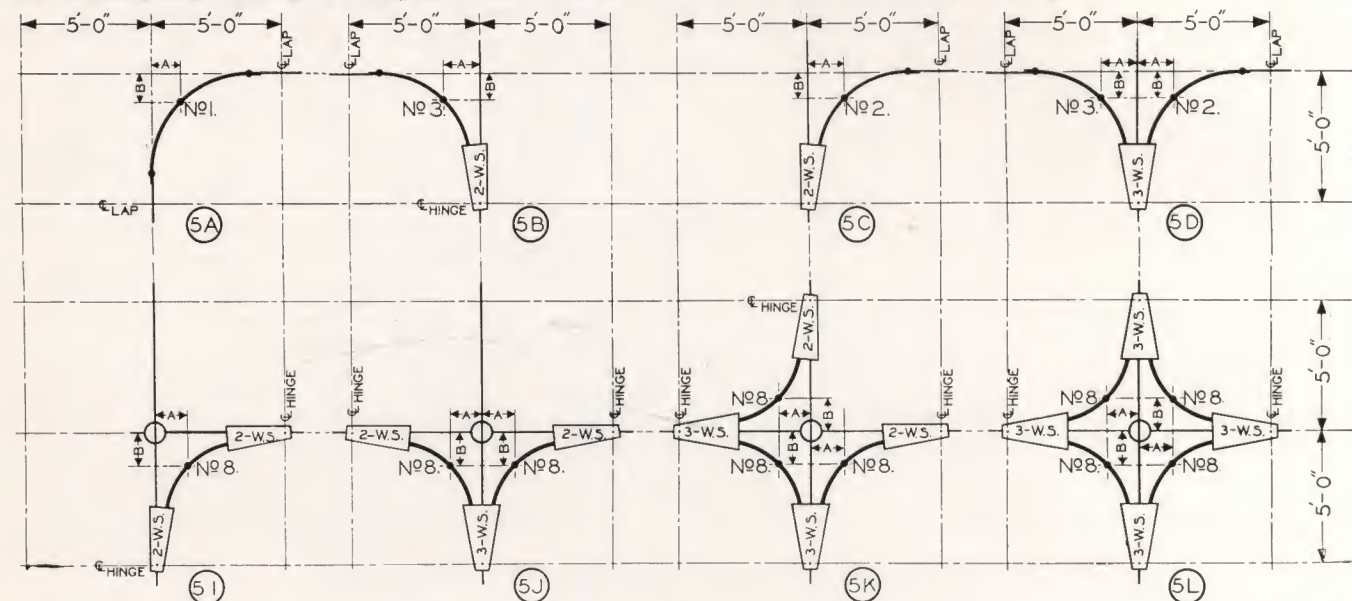
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Standard Radius Curves for Tongue Switch Series 5

The curves in groupings shown below should be used in track layouts allowing five foot spacing from intersection of tangent lines to the center of the lap splice or the switch hinge. Hangers shipped with curves are

located as indicated in the drawings. Standard series curves are accurately bent to fit templates and, although they may be sprung in shipment, re-forming by hand can be done on the job.



SWITCHES REQUIRED					STANDARD CURVES							
Group	2 Way	Wye	3 Way	Cross Track	No. Required	Curve No.	Radius	No. Required	Curve No.	Radius	A	B
5-A					1	1	3' 9"				1'13 <sup>1</sup> / <sub>16</sub> "	1'13 <sup>1</sup> / <sub>16</sub> "
5-B	1				1	3	3' 5 <sup>3</sup> / <sub>16</sub> "				1'4 <sup>1</sup> / <sub>8</sub> "	1'0 <sup>3</sup> / <sub>8</sub> "
5-C	1				1	2	3' 5 <sup>3</sup> / <sub>16</sub> "				1'4 <sup>1</sup> / <sub>8</sub> "	1'0 <sup>3</sup> / <sub>8</sub> "
5-D			1		1	3	3' 5 <sup>3</sup> / <sub>16</sub> "	1	2	3'5 <sup>3</sup> / <sub>16</sub> "	1'4 <sup>1</sup> / <sub>8</sub> "	1'0 <sup>3</sup> / <sub>8</sub> "
5-E*		1			1	3	3' 5 <sup>3</sup> / <sub>16</sub> "	1	2	3'5 <sup>3</sup> / <sub>16</sub> "	1'4 <sup>1</sup> / <sub>8</sub> "	1'0 <sup>3</sup> / <sub>8</sub> "
5-F*	2	1			2	8	2'11 <sup>3</sup> / <sub>4</sub> "				1'3"	1'3"
5-G*	1	1	1		2	8	2'11 <sup>3</sup> / <sub>4</sub> "	1	2	3'5 <sup>3</sup> / <sub>16</sub> "	1'3"	1'3"
5-H*		2	2		4	8	2'11 <sup>3</sup> / <sub>4</sub> "				1'3"	1'3"
5-I	2			1	1	8	2'11 <sup>3</sup> / <sub>4</sub> "	Standard curves are bent to fit accurately built templates. Occasionally they become sprung in shipment or may require slight reforming to meet construction variations. This is easily done by the usual methods of rail bending.			1'3"	1'3"
5-J	2		1	1	2	8	2'11 <sup>3</sup> / <sub>4</sub> "				1'3"	1'3"
5-K	2		2	1	3	8	2'11 <sup>3</sup> / <sub>4</sub> "				1'3"	1'3"
5-L			4	1	4	8	2'11 <sup>3</sup> / <sub>4</sub> "				1'3"	1'3"

\*For switch grouping see groups GE, GF, GG and GH on page 239.

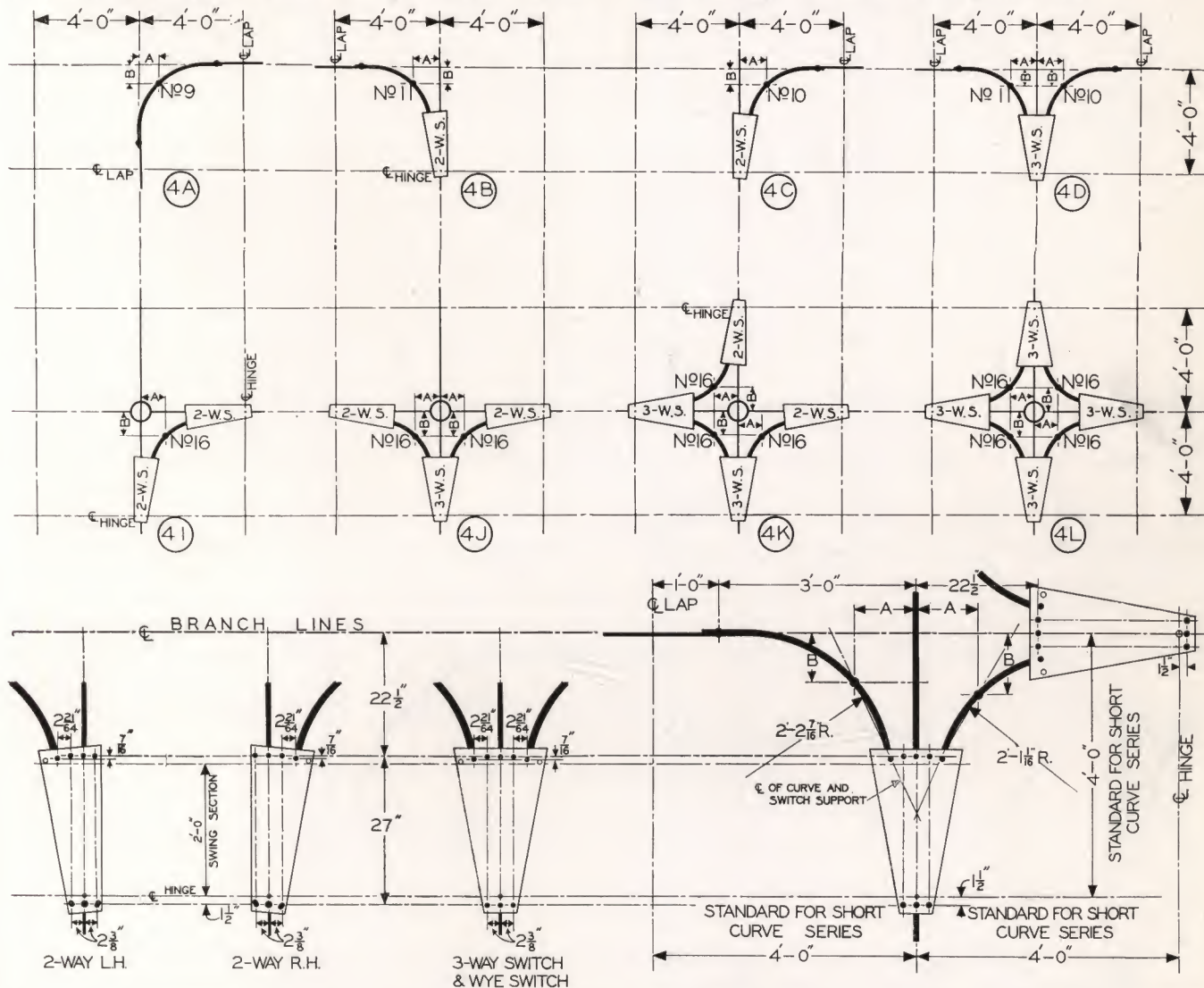
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Short Radius Curves for Tongue Switch Series 4

Curves used in the switch groups illustrated below allow measurement of only four feet from the intersection of tangent lines to the center of the lap splice or to the switch hinge. Minimum spacing of branch tracks from tongue switches using the short series

curves is  $2'6\frac{1}{2}"$  as shown in drawing on page 242. Short series curves are bent to fit accurate templates. They are occasionally sprung in shipment but may be reformed by the usual bending methods.



SWITCHES REQUIRED					STANDARD CURVES								
Group	2 Way	Wye	3 Way	Cross Track	No. Required	Curve No.	Radius	No. Required	Curve No.	Radius	A	B	
4-A					1	9	2'6"				0' 8 <sup>25</sup> / <sub>32</sub> "	0' 8 <sup>25</sup> / <sub>32</sub> "	
4-B	1				1	11	2'2 <sup>7</sup> / <sub>16</sub> "				1' 0"	0' 8 <sup>1</sup> / <sub>8</sub> "	
4-C	1				1	10	2'2 <sup>7</sup> / <sub>16</sub> "				1' 0"	0' 8 <sup>1</sup> / <sub>8</sub> "	
4-D			1		1	11	2'2 <sup>7</sup> / <sub>16</sub> "	1	10	2'2 <sup>7</sup> / <sub>16</sub> "	1' 0"	0' 8 <sup>1</sup> / <sub>8</sub> "	
4-E*		1			1	11	2'2 <sup>7</sup> / <sub>16</sub> "	1	10	2'2 <sup>7</sup> / <sub>16</sub> "	1' 0"	0' 8 <sup>1</sup> / <sub>8</sub> "	
4-F*	2	1			2	16	2'1 <sup>1</sup> / <sub>16</sub> "				0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	
4-G*	1	1	1		2	16	2'1 <sup>1</sup> / <sub>16</sub> "	1	10	2'2 <sup>7</sup> / <sub>16</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	
4-H*		2	2		4	16	2'1 <sup>1</sup> / <sub>16</sub> "	Standard curves are bent to fit accurately built templates. Occasionally they become sprung in shipment or may require slight reforming to meet construction variations. This is easily done by the usual methods of rail bending.				0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "
4-I	2			1	1	16	2'1 <sup>1</sup> / <sub>16</sub> "					0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "
4-J	2		1	1	2	16	2'1 <sup>1</sup> / <sub>16</sub> "				0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	
4-K	2		2	1	3	16	2'1 <sup>1</sup> / <sub>16</sub> "				0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	
4-L			4	1	4	16	2'1 <sup>1</sup> / <sub>16</sub> "				0'11 <sup>3</sup> / <sub>8</sub> "	0'11 <sup>3</sup> / <sub>8</sub> "	

\*For switch grouping see groups GE, GF, GG and GH on page 239.

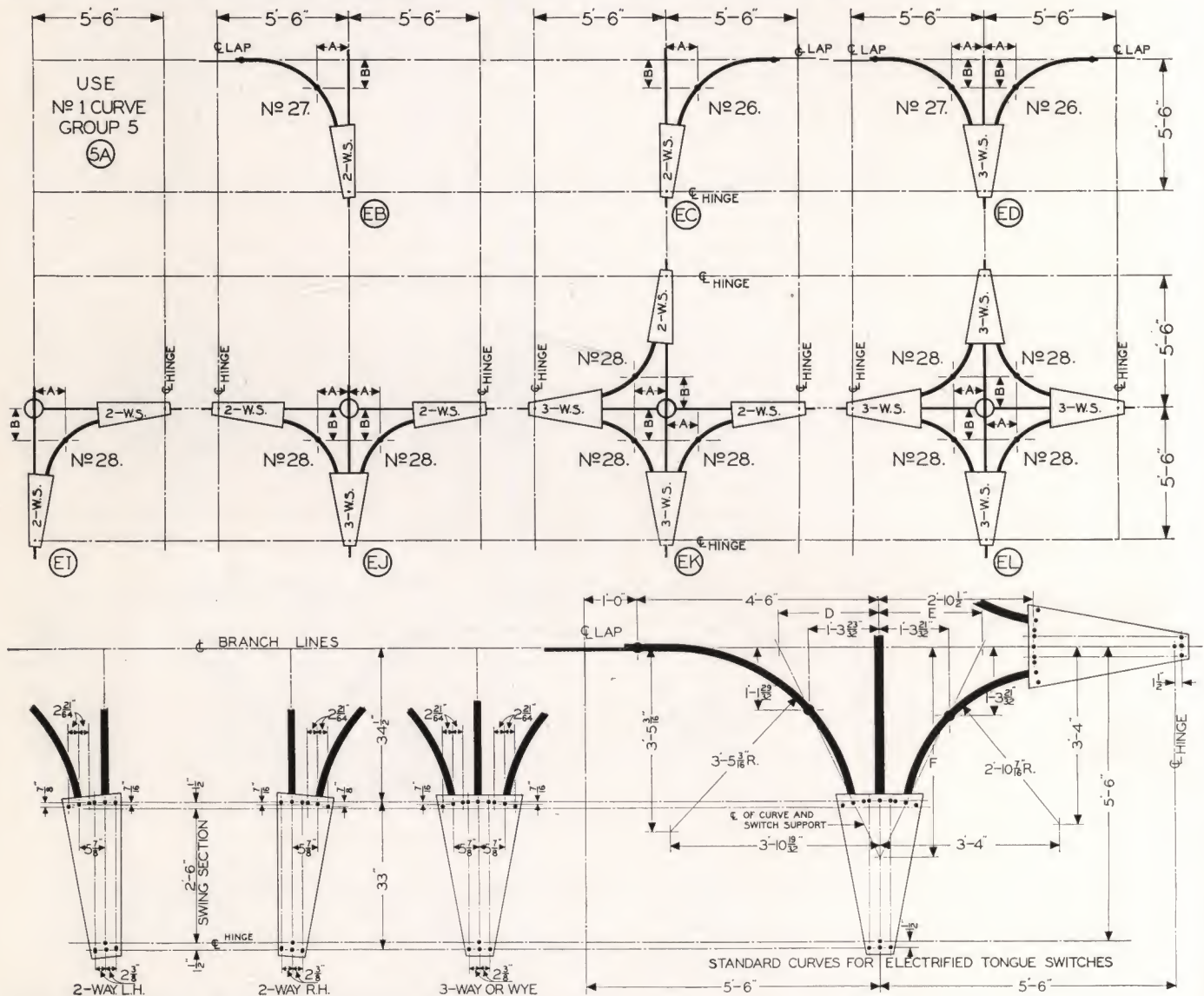
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Curves for Electrified Tongue Switches, Group E

Curves in this series are for use with the Electrified Tongue Switches shown on pages 90 and 91. Curves in this series are listed on page 89. Complete dimensional data is offered in the drawing and table

below which lists the various standard switch groups. Curves are accurately bent and, although occasionally sprung in shipment, they may be easily reformed to meet track layout requirements.



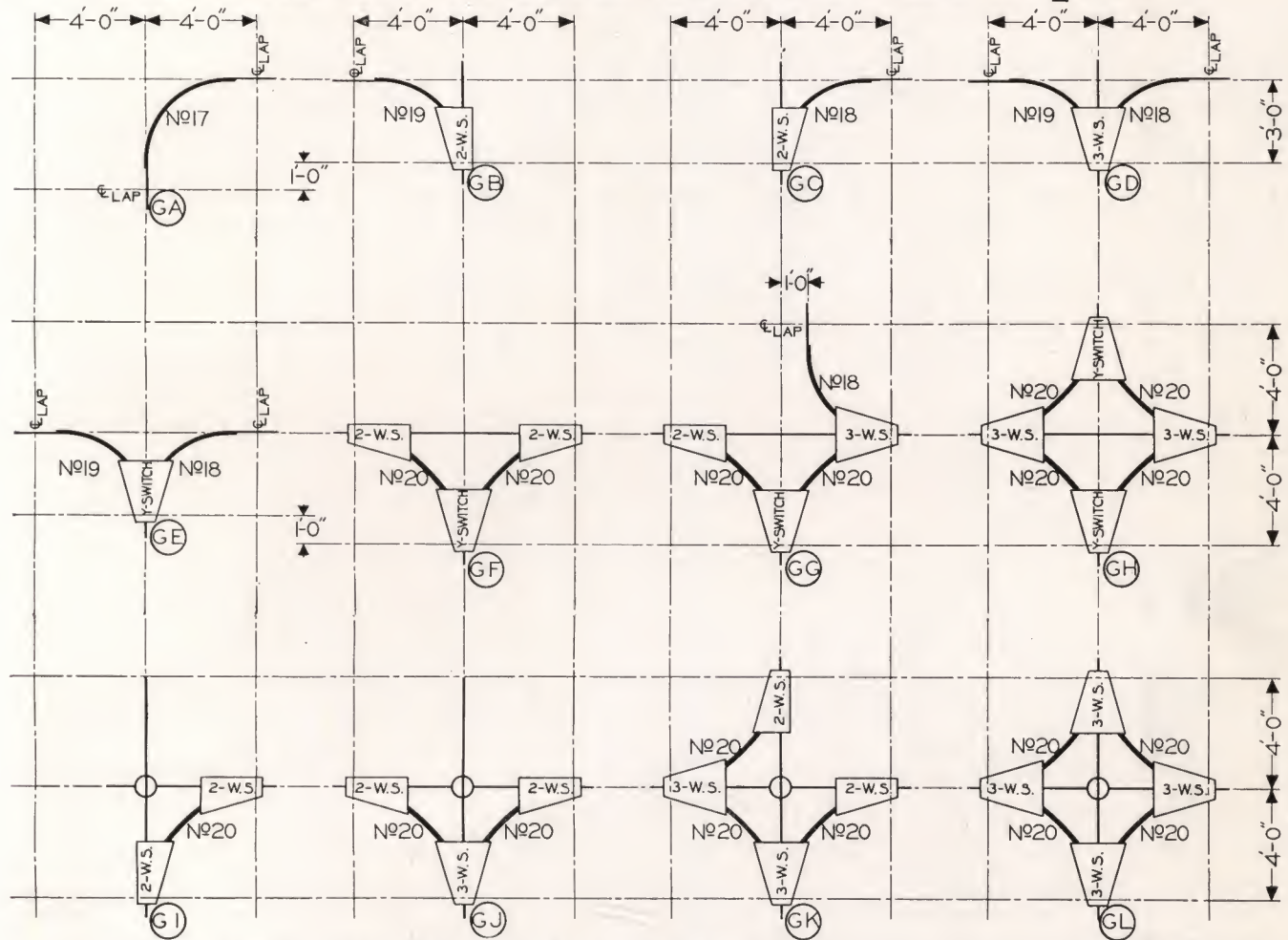
SWITCHES REQUIRED					STANDARD CURVES								
Group	2 Way	Wye	3 Way	Cross Track	No. Required	Curve No.	Radius	No. Required	Curve No.	Radius	A	B	
EB	1				1	27	3' 5 <sup>3</sup> / <sub>16</sub> "				1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EC	1				1	26	3' 5 <sup>3</sup> / <sub>16</sub> "				1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
ED			1		1	26	3' 5 <sup>3</sup> / <sub>16</sub> "	1	27	3' 5 <sup>3</sup> / <sub>16</sub> "	1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EE*		1			1	26	3' 5 <sup>3</sup> / <sub>16</sub> "	1	27	3' 5 <sup>3</sup> / <sub>16</sub> "	1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EF*	2	1			2	28	2' 10 <sup>7</sup> / <sub>16</sub> "	1	27	3' 5 <sup>3</sup> / <sub>16</sub> "	1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EG*	1	1	1		2	28	2' 10 <sup>7</sup> / <sub>16</sub> "	1	26	3' 5 <sup>3</sup> / <sub>16</sub> "	1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EH*		2	3		4	28	2' 10 <sup>7</sup> / <sub>16</sub> "	Standard curves are bent to fit accurately built templates. Occasionally they become sprung in shipment or may require slight reforming to meet construction variations. This is easily done by the usual methods of rail bending.				1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "
EI	2			1	1	28	2' 10 <sup>7</sup> / <sub>16</sub> "					1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "
EJ	2		1	1	2	28	2' 10 <sup>7</sup> / <sub>16</sub> "					1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "
EK	2		2	1	3	28	2' 10 <sup>7</sup> / <sub>16</sub> "				1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	
EL	4			1	4	28	2' 10 <sup>7</sup> / <sub>16</sub> "				1' 3 <sup>31</sup> / <sub>32</sub> "	1' 1 <sup>29</sup> / <sub>32</sub> "	

\*For switch groupings see groups GE, GF, GG and GH on page 239.

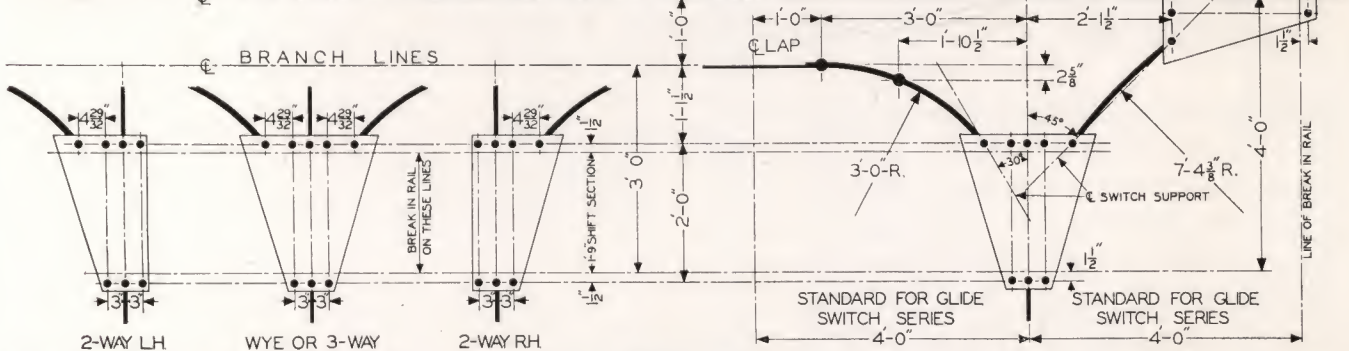
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Curves for Glide Switch Groups G



FOR GROUPS WHERE NO. 20 CURVES ARE USED



SWITCHES REQUIRED					NON-ELECTRIFIED CURVES						ELECTRIFIED CURVES				
Group	2 Way	3 Way	Wye	Cross Over	No. Req.	Cv. No.	Radius	No. Req.	Cv. No.	Radius	No. Req.	Cv. No.	No. Req.	Cv. No.	
G-A					1	17	3'0"				1	21			
G-B	1				1	19	3'0"				1	23			
G-C	1				1	18	3'0"				1	22			
G-D		1			1	18	3'0"	1	19	3'0"	1	22	1	23	
G-E			1		1	18	3'0"	1	19	3'0"	1	22	1	23	
G-F	2		1		2	20	7'4 3/8"				2	24			
G-G	1	1	1		2	20	7'4 3/8"	1	18	3'0"	2	24	1	22	
G-H		2	2		4	20	7'4 3/8"	Standard curves are bent to fit accurately built templates. Occasionally they become sprung in shipment or may require slight reforming to meet construction variations. This is easily done by the usual methods of rail bending.				4	24		
G-I	2			1	1	20	7'4 3/8"					1	24		
G-J	2	1		1	2	20	7'4 3/8"					2	24		
G-K	2	2		1	3	20	7'4 3/8"					3	24		
G-L		4		1	4	20	7'4 3/8"					4	24		

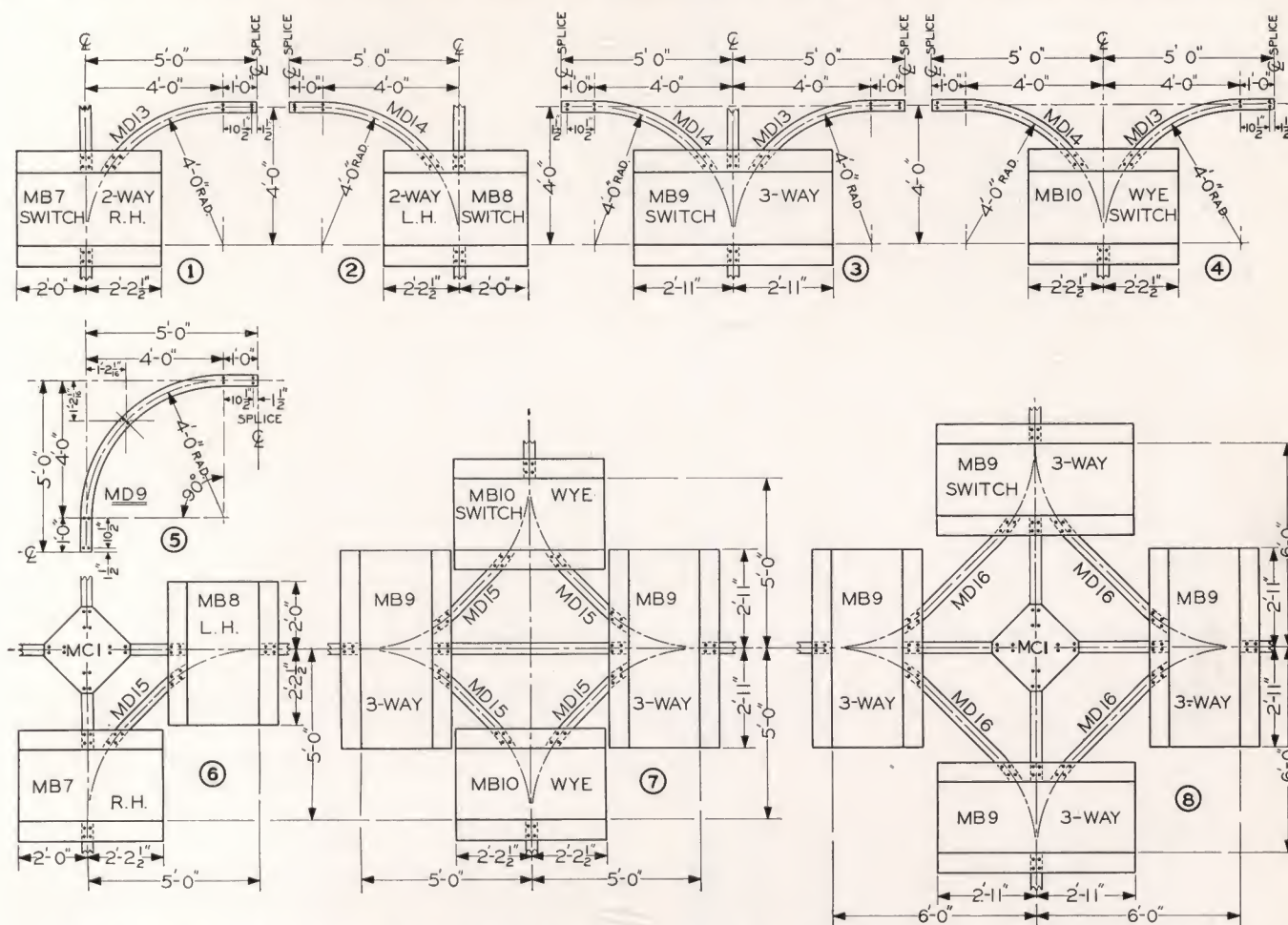
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.







# Curves for RailMaster Glide Switches



## DIMENSIONS FOR STANDARD CURVE AND GLIDE SWITCH GROUPS

The above drawings illustrate the usual groupings of RailMaster Glide Switches and give complete dimensions of curves. Minimum spacing details will be found on page 235, and Figure 235A on this same page shows superstructure for all curves and switches. Hole drilling details for curves are shown to the right in Figure 241A. Symbols in the upper corner of this drawing give the varying dimensions as applied to the different groups.

See page 134 for list and general description covering curves used above. Where electrification is used, add the letter "H" into the numbers shown in the above chart.

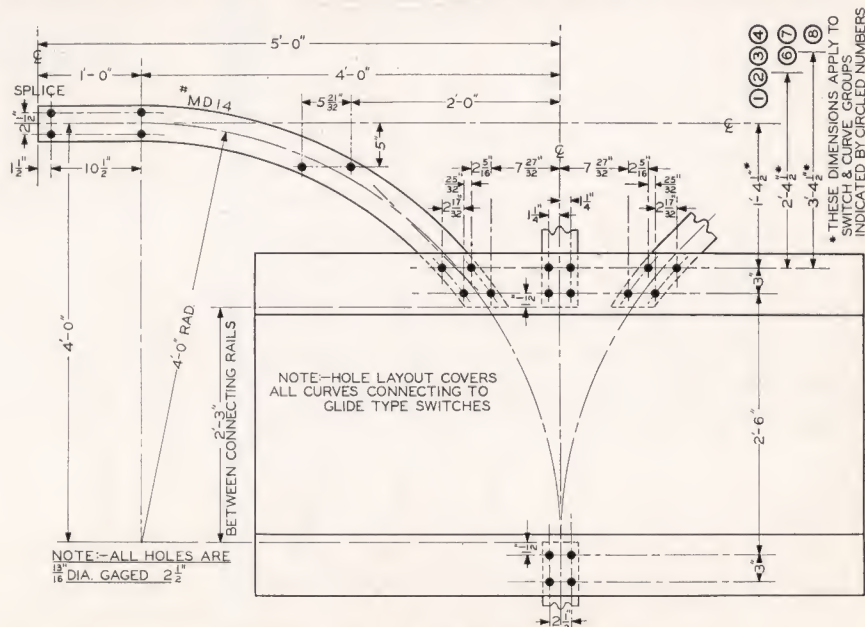


Fig. 241A

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.







# Special Switches From Standard Parts

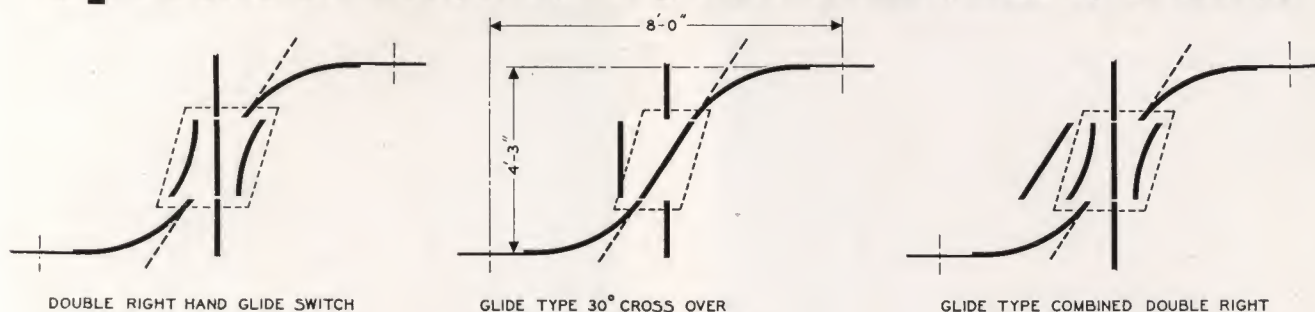


Fig. 243 A

Fig. 243 B

Fig. 243 C

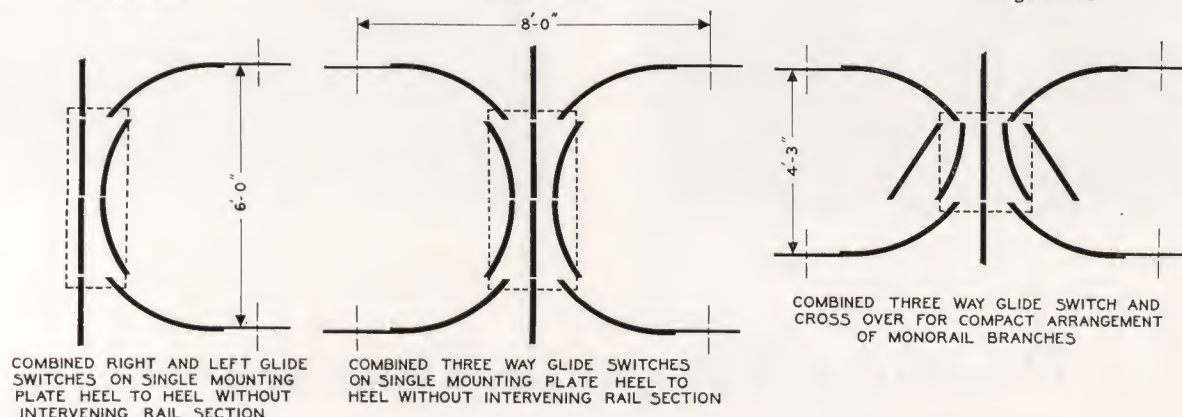


Fig. 243 D

Fig. 243 E

Fig. 243 F

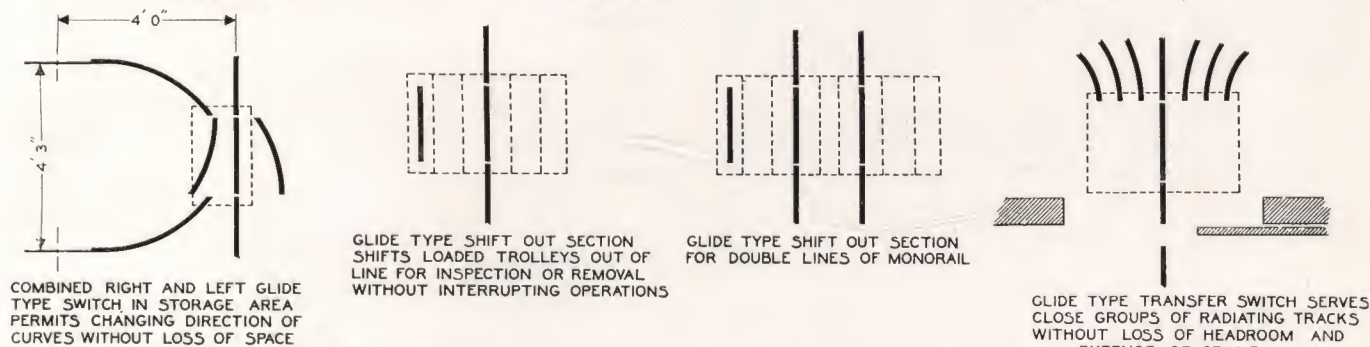


Fig. 243 G

Fig. 243 H

Fig. 243 I

Fig. 243 J

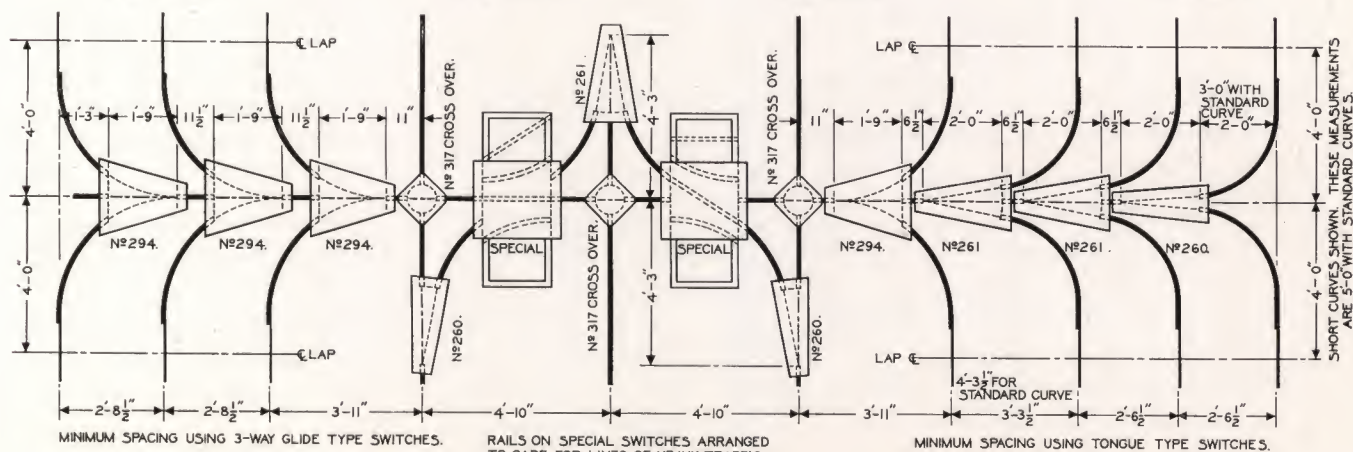
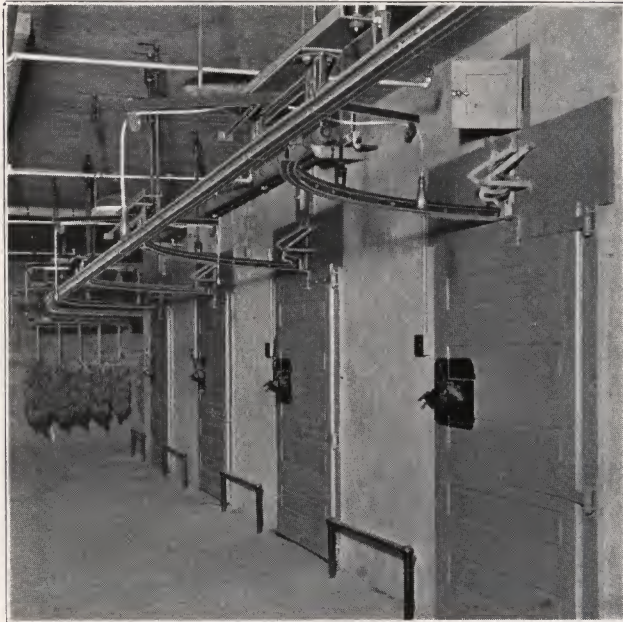


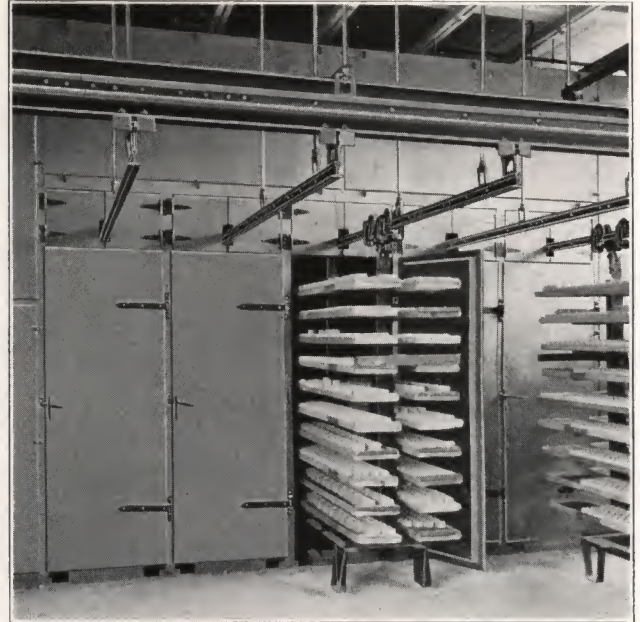
Fig. 243 K

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





Door closures around track leading into banana ripening rooms. Automatic in operation.



Ovens in ceramic plant equipped with closures around MonoRail tracks. Note also interlocks for cranes.

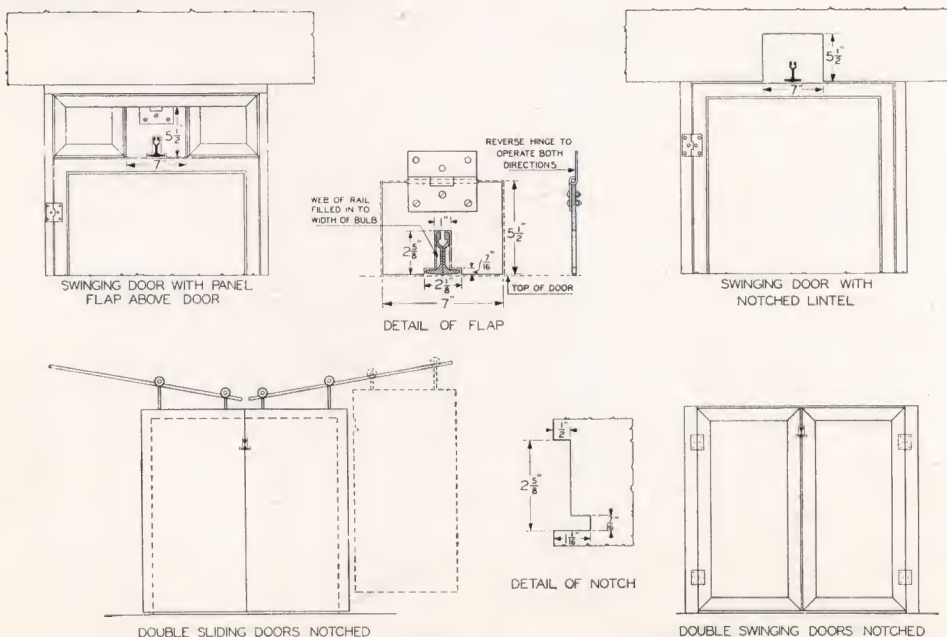
## Passing Through Doorways

American MonoRail overhead conveying systems are frequently called upon to handle materials into and through drying, baking, annealing, refrigerating and similar processes.

Provision must be made in such installations for closures that will permit the passing of loaded trolleys, yet will prevent the escape of heat from ovens or kilns, or

the raising of temperature in ice boxes or refrigeration rooms.

MonoRail engineers have solved these problems in a variety of installations. Illustrations on this page show typical closures that have given satisfactory results in service.



Where MonoRail passes through door openings, the doors may often be arranged so that no break in the rail is necessary. Double doors whether hinged or sliding may be notched to the contour of the rail in each half of the meeting edges when the MonoRail is centered in the opening. Often it may be arranged to pass above a hinged type door through a notched panel. A small closure door with a hinge at the top and notched at the bottom to fit down over the rail section will prevent the loss of heat or humidity in ovens, proofing rooms, dryers and the like.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



# Fire Door Track Openers

Detail shown on this page supplements the description covering Track Openers offered on page 54 in the general catalog section.

Drawings here illustrate various methods of installation. Figure 245A shows a single opener mounted under the door lintel where headroom is sufficient to permit upward swing of the lift-out section. Figure 245B illustrates the application of two openers for horizontal doors on each side of fire wall.

These simple devices find practical use wherever a MonoRail system must pass through doorways. They eliminate hand operation for breaking the track section. They can be furnished with swing-out section long enough to clear jack-knife doors and will operate successfully with any type of air operated or electrically controlled door closures.

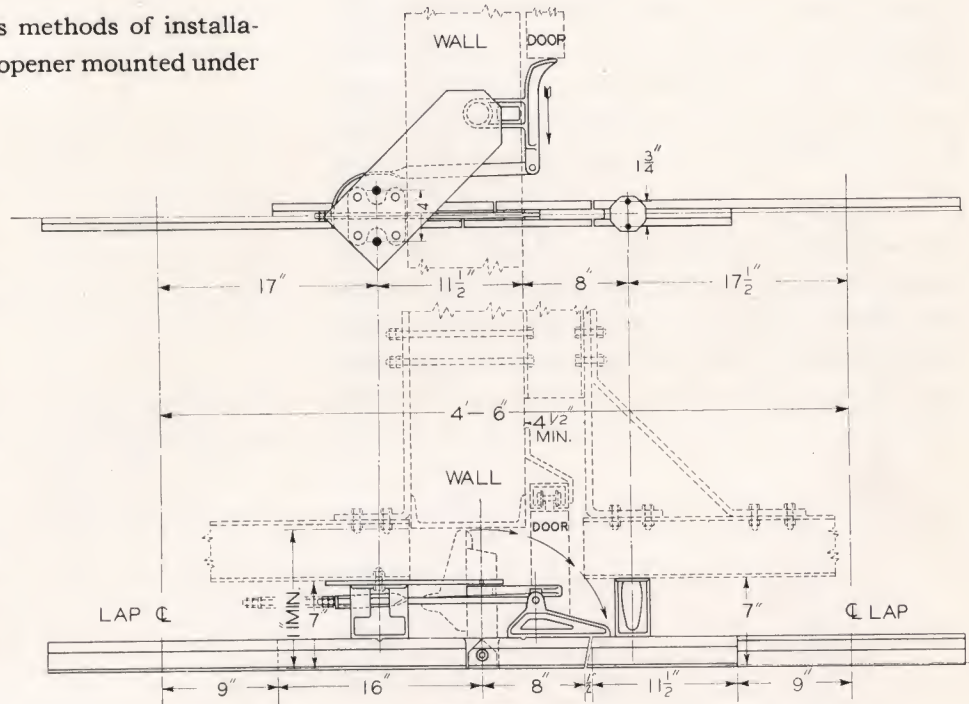


Fig. 245 A

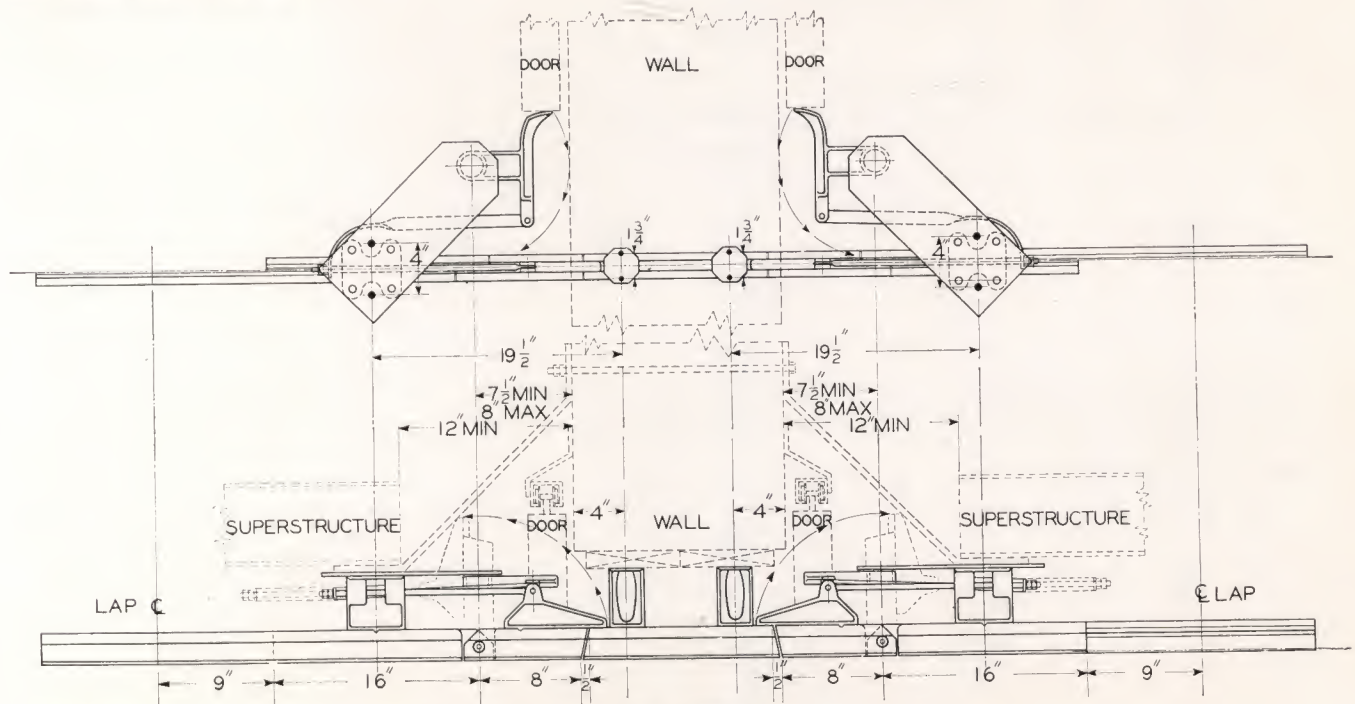


Fig. 245B

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



## Detail of MonoRail Lifts

Application of MonoRail Lifts for transfer of carriers between tracks on various levels greatly increases the utility of the handling system. Loads can be raised or lowered from floor to floor without rehandling from original carriers. Discharge of carriers from lift, return of lift section to loading level, as well as complete cycles of operation can be secured by simple automatic devices with safety features protecting all open track ends.

Lift towers are installed either outside or inside the building with any type of hoisting mechanism mounted where most convenient for operation. Interior towers can be supported from the lowest floor level or from the top floor with guides extending to MonoRail systems in story below. See Figure 247A on the next

page showing typical tower plans. In some cases where light loads are to be transferred lift sections can be arranged with single or double guides, or plunger types as used with MonoRail Dipping Machines described on page 250.

Detail in Figure 246 covers No. MF-1 RailMaster Lift Section. This device includes interlock features for track alignment similar in operation to the interlocks used on RailMaster Cranes. Trolley wheels cannot be moved off the section unless it is latched to a connecting track since the safety stop rises only upon action of the interlock arm.

Figure 247B offers dimension requirements covering No. 651 MonoRail Lift for Standard Line MonoRail

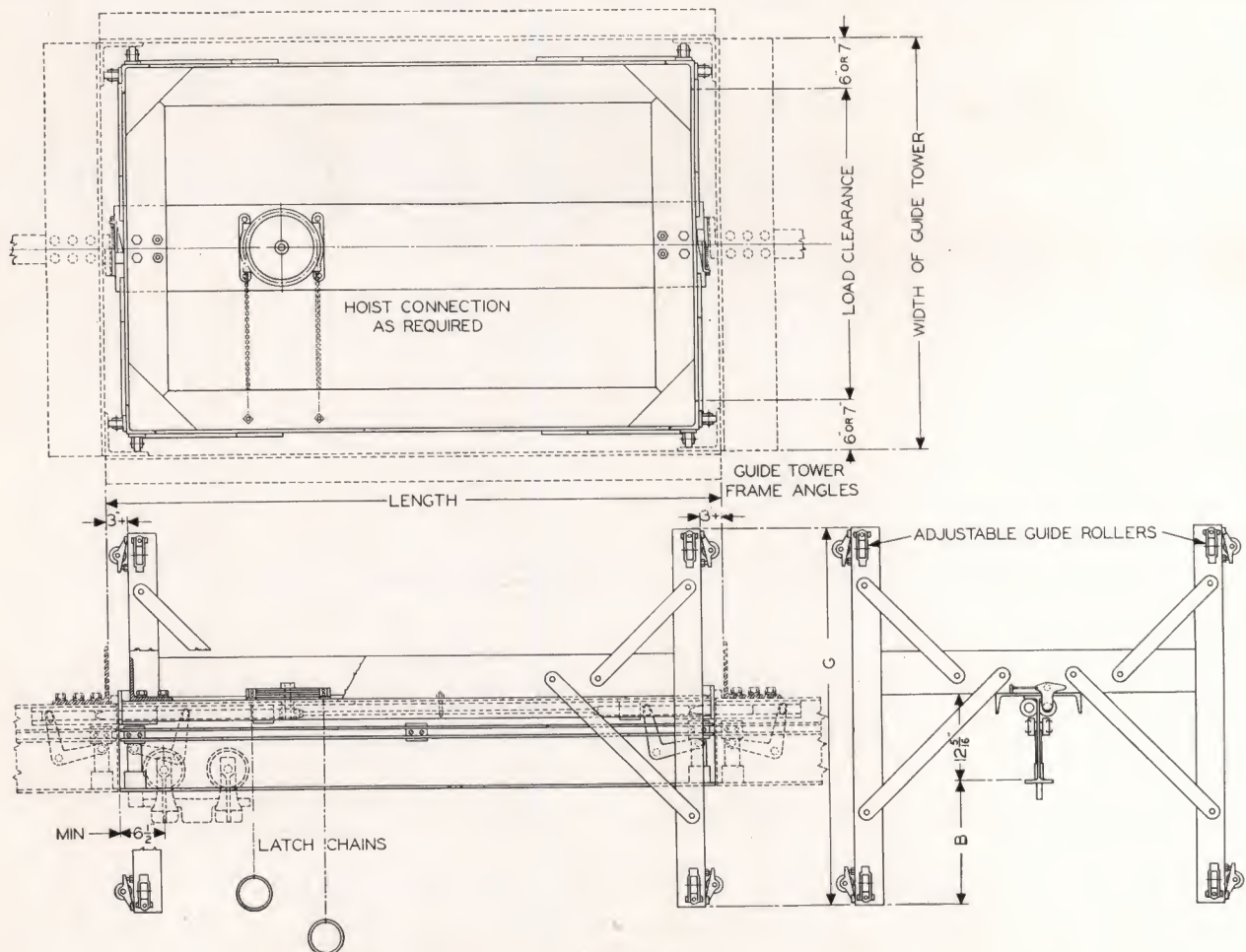


Fig. 246

### Details of No. MF-1 RailMaster Lift Section

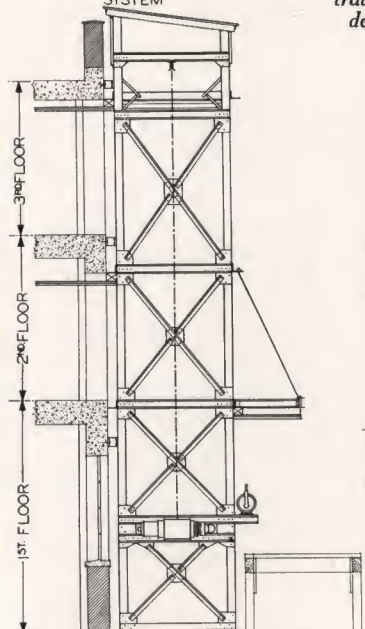
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



Systems. Similar interlocking and safety features are included and illustrated.

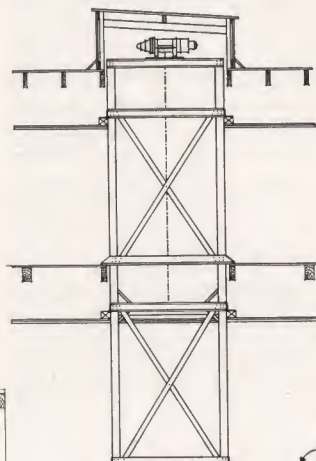
American MonoRail Engineers will cooperate in planning the installation of MonoRail lifts. Their experience in handling many such applications may be of material assistance in any contemplated projects involving lifting or dipping machinery.

SHOWING OUTSIDE TYPE OF LIFT TOWER ERECTED OUTSIDE BUILDING AND SERVING DIFFERENT FLOORS FROM AN OUTSIDE RAIL SYSTEM

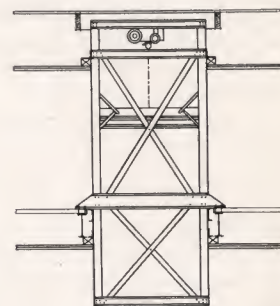


The application for American MonoRail lifts to a variety of situations is visualized by the illustrations below. See also description on preceding page.

SHOWING LIFT TOWER SUPPORTED FROM FLOOR, AND HAVING PENT HOUSE TO ACCOMMODATE HOIST WHERE HEADROOM IS INSUFFICIENT.



SHOWING LIFT TOWER SUPPORTED FROM ONE FLOOR AND EXTENDING TO MONORAIL SYSTEM IN STORY BELOW.



TYPICAL PLAN OF LIFT TOWER

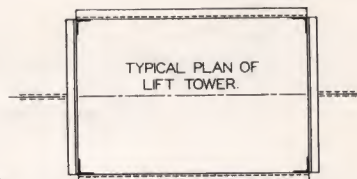


Fig. 247 A

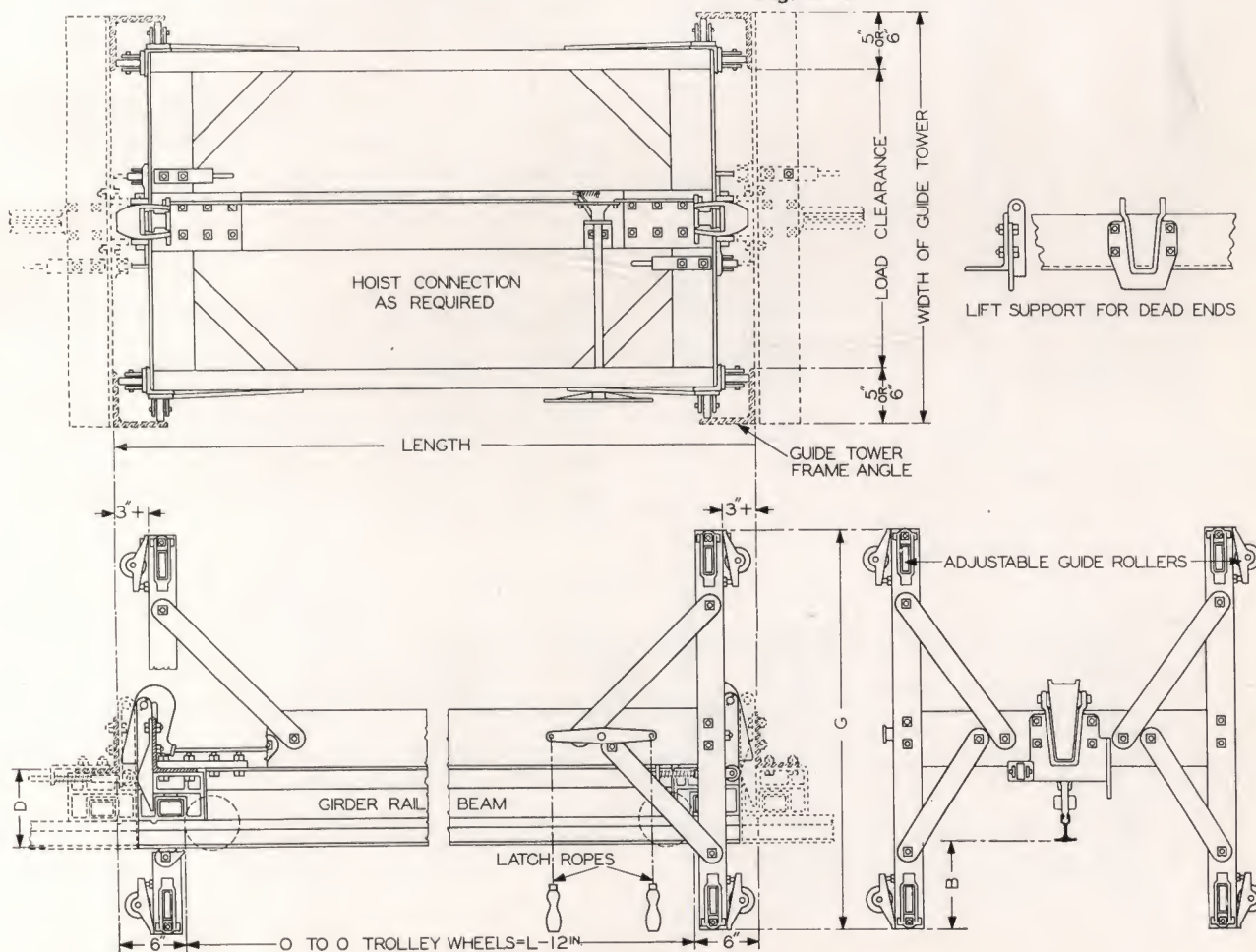


Fig. 247 B

### Details of No. 651 Standard MonoRail Lift Section

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



## Dipping and Lifting Machines

MonoRail lifting and dipping devices are called upon to perform a wide range of operations and to meet varying conditions as to power available, headroom and clearances at the point where the equipment is to be installed, lifting speed, speed control, timing of dipping operations, length of drop and other conditions incidental to the manufacturing problem. This variety of conditions cannot always be met by the standard equipment and modifications or new designs are sometimes necessary. Some of these modifications which have been furnished to meet particular problems are shown in the drawings on this and the following page.

Often there are points in a MonoRail system where much lifting must be done. It is usually quicker and less expensive to put in a plunger type MonoRail lift operated by air or electricity at such points rather than to have hand or power hoists on each separate trolley

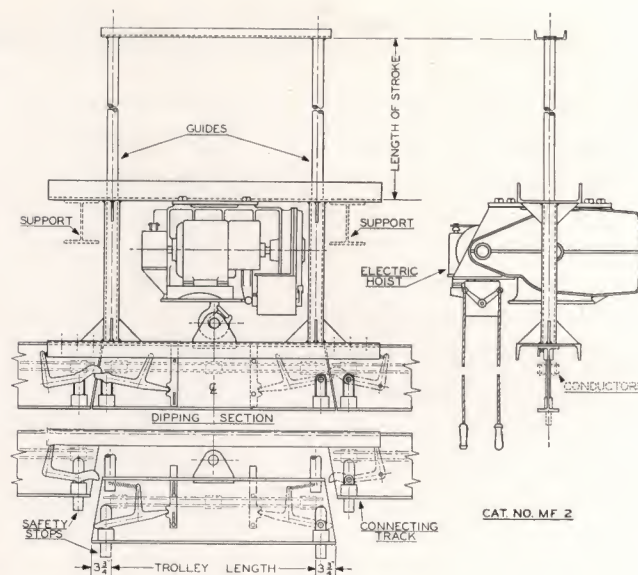


Fig. 248 A

to do the lifting. Even with hand hoists on each trolley, enough time may be saved in the lifting operation to justify the moderate expense of a plunger lift.

Modifications of the standard plunger type of hoisting device are unlimited. Figures 248A and 248B show electric hoists replacing the cylinder type of air hoist generally used. The height of lift possible is usually limited due to the extension of the plunger type guides above the line of rail which increases with the length of the lift.

The plunger type of lift is also adapted to rapid dipping operations where the materials to be dipped are suspended from short racks or trolleys. When racks are long and are liable to have an off balance load, the guides must be proportionally longer than in short, balanced loads. For this reason it is sometimes a question as to which type of dip or lift to use and this can only be answered by a study of the conditions of a particular problem.

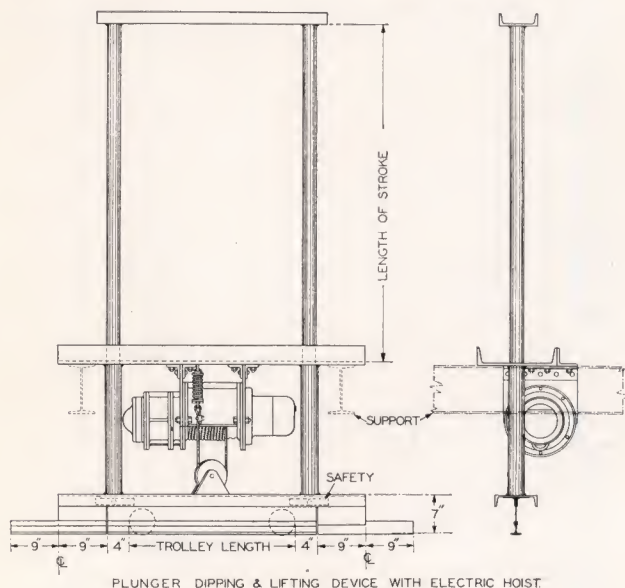


Fig. 248 B

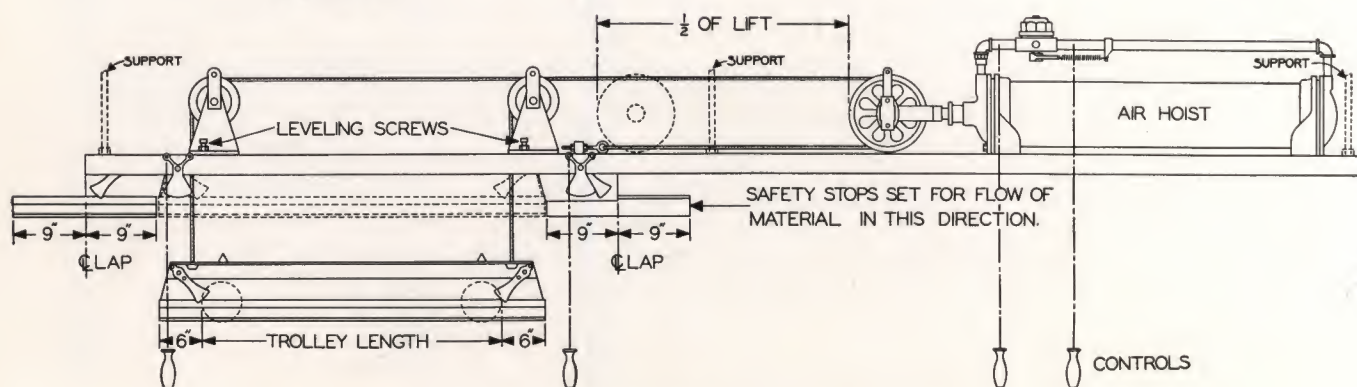


Fig. 248 C

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



Long racks and heavier loads are handled better with suspension type dips and lifts, and where headroom is limited and plunger type dips cannot be used, some suspension type will usually apply. Suspension dips may be operated by electric hoists or air motor hoists, but where air pressure is available, the cylinder type of air hoist is generally used as shown in Figure 248C on the opposite page. Volatile painting or other mixtures of an explosive or corrosive nature usually require the use of air cylinder hoists, but sometimes an electric hoist is used by placing it at a distance away from the dipping machine. This is illustrated in the arrangement shown in Figure 249A. Explosion proof hoist and controls may also be used.

An extended double drum hoist can be arranged into a very compact type of dipping machine as space or convenience may require as is shown in the design in Figure 249B.

A close headroom variation of dipping machine shown on page 207 operated with an air cylinder hoist may be used when the dip is in a straight run of MonoRail which will permit mounting the cylinder horizontally over one approach.

Since dipping machines must be made up to meet specific conditions as to loading, speed, power available, clearances, size of rack and length of drop, it is

not possible to give many definite measurements in the drawings shown herein which are offered merely as suggestions. Detailed designs of dipping and lifting equipment will be submitted when requested.

All open rail ends on dipping and lifting machines are guarded by safety stops. The safeties used may be automatic or hand operated. Where automatic safeties can be used, slight depressions are placed in the rail flanges on the lowering section to spot the trolley wheels and prevent the trolley from shifting until the automatic safeties operate as the load starts to move. Care must be exercised to see that the trolleys are not stopped partly on and partly off the lowering section.

Hand operated safety stops are usually recommended as they tend to force the placing of the load in proper position on the lowering section of rail. With hand operated safeties the load is stopped at the approach end of the lowering section and cannot be moved forward until the safety rope is pulled. It is then run onto the dip section and against the stop at the farther end. This stops it in the proper position on the lowering section for the operation of the machine. Automatic floating safeties or dogs used in conjunction with hand operated safeties prevent back movement of the trolleys into open rail ends, but allow the trolley to move forward without interruption.

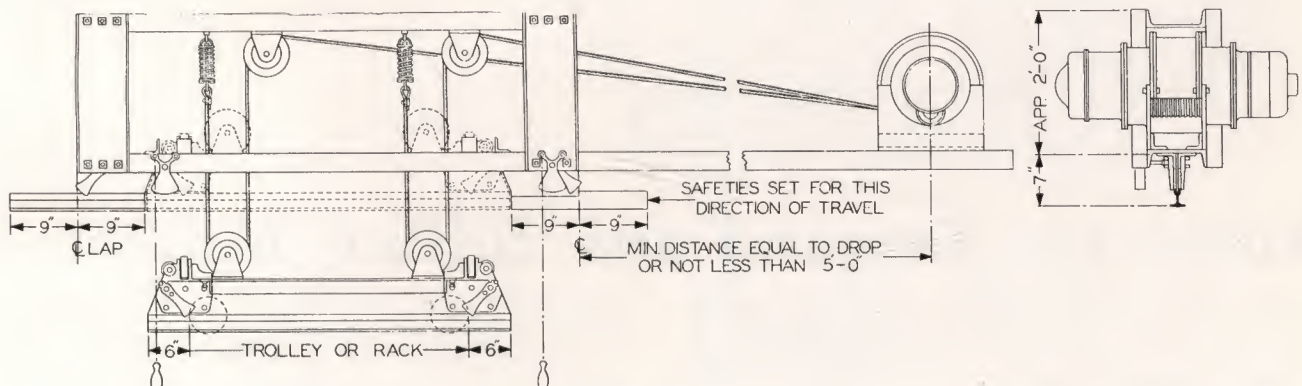


Fig. 249 A

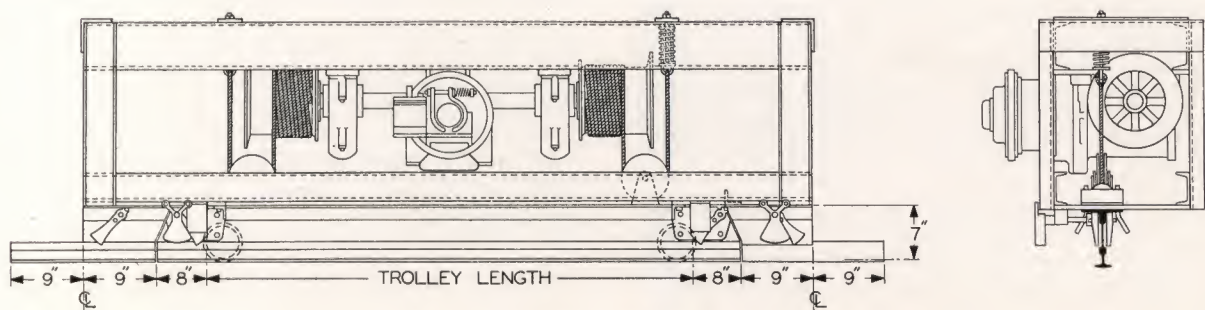
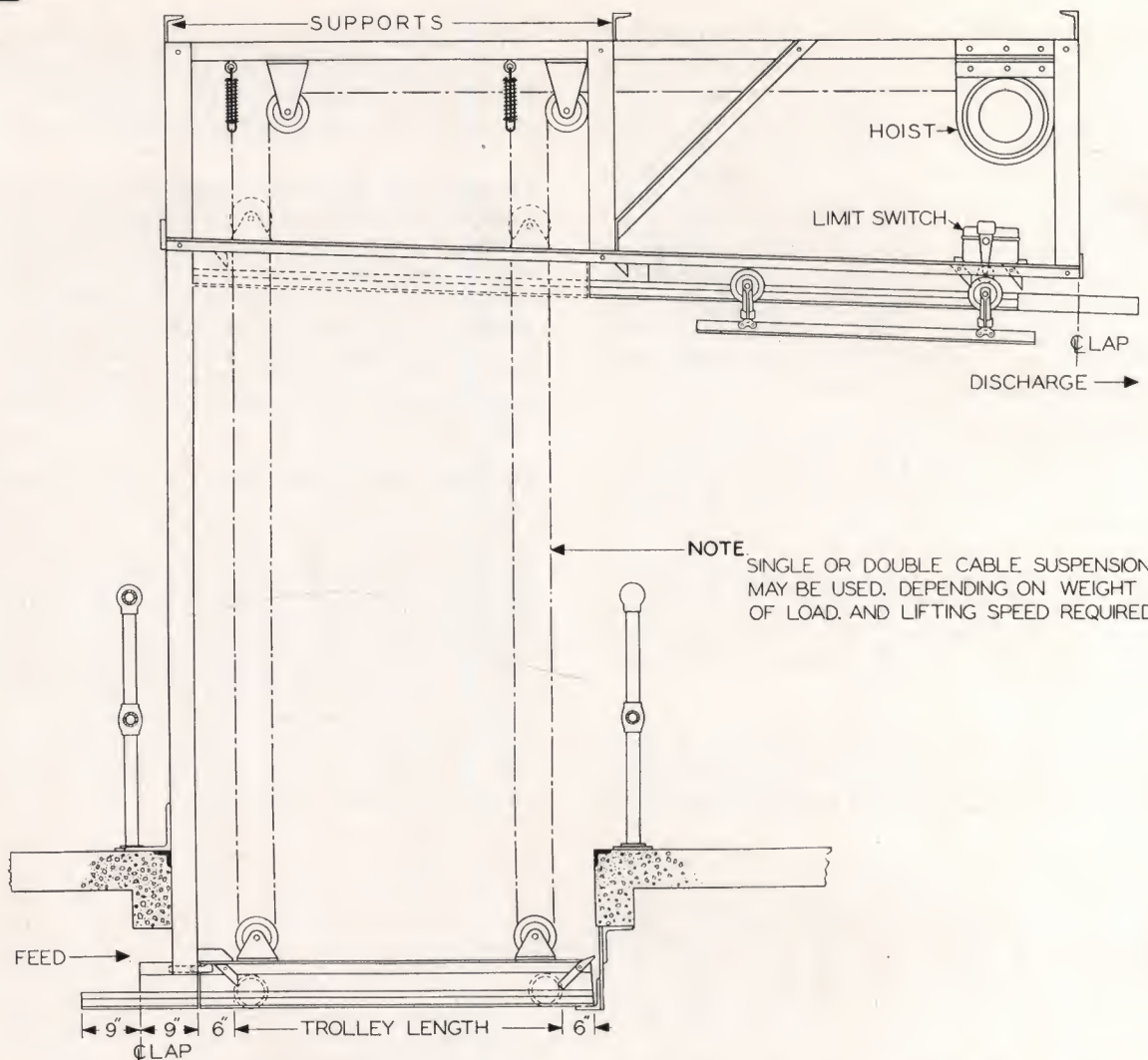


Fig. 249 B

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## Automatic Dipping and Lifting Machines

Lifting and dipping machines employing electric hoists which will complete a prearranged cycle of operations have been furnished and may be arranged to meet a variety of conditions.

In dipping operations the hoist may be arranged with push button control for lowering a load quickly to a given dipping level. Time relays then operate, allowing the load to remain as long as required according to the time adjustment of the relay. At the end of the time the electric hoist automatically raises the loaded trolley at a given speed to the level of the track system. The dipped product is removed and replaced with a trolley load of undipped material, completing a cycle of operations.

Lowering or raising operations working automatically through a cycle are also furnished for certain conditions. The accompanying diagram of a double guide elevator shows the arrangement used for lifting and discharging a loaded trolley and automatically returning the lift section to the lower MonoRail level ready to receive another load.

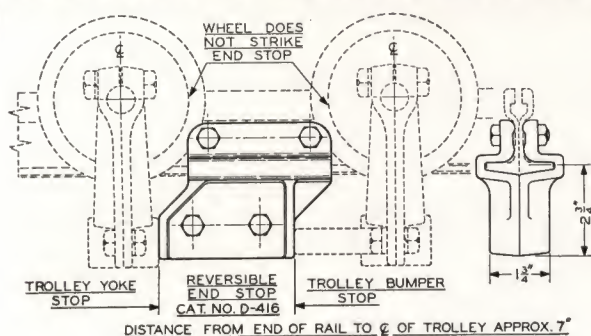
The loaded trolley from the lower level MonoRail system is run onto the lifting section. The operator pushes the electric hoist control button starting the hoist motor and lifting the load to the upper rail level where it stops with the lifting section sloping toward the discharge end. As the lift section registers at the upper track level, an upper limit switch stops the hoist motor and a dog which holds the trolley on the sloping section is kicked out of the way allowing the trolley to run off by gravity. When the loaded trolley has cleared the lift by about two or three feet a lug placed on the trolley yoke trips a hatchway limit switch set over the rail. This reverses the hoist motor and lowers the lift section to its original position. As it registers, a lower limit switch stops the hoist motor, the safety stop is automatically lifted, the cycle is completed and the lift is ready for another loaded trolley.

Lifts can be arranged to run automatically through a cycle of lowering loads in a similar manner. Escape-ment feeders can be provided to make lifting and lowering of loads entirely automatic.

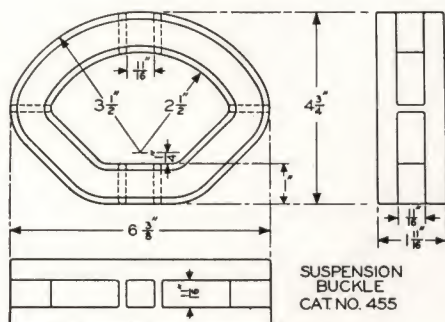
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



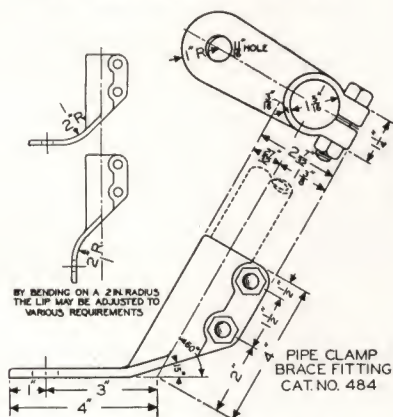
## Details of Standard Line Suspension Equipment



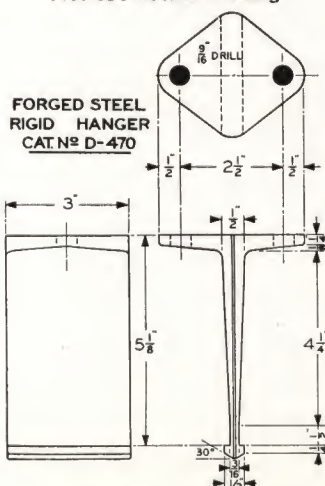
### No. 416 End Stop



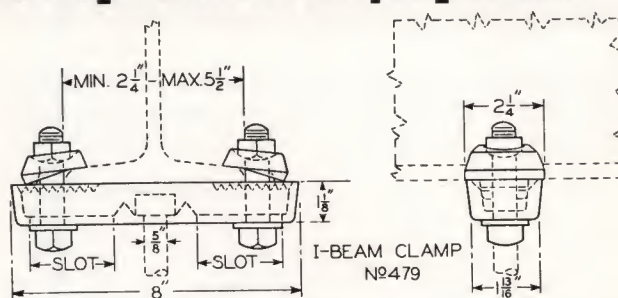
### No. 455 Suspension Buckle



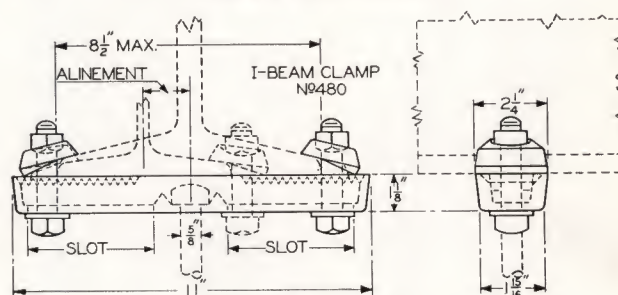
### No. 484 Brace Fitting



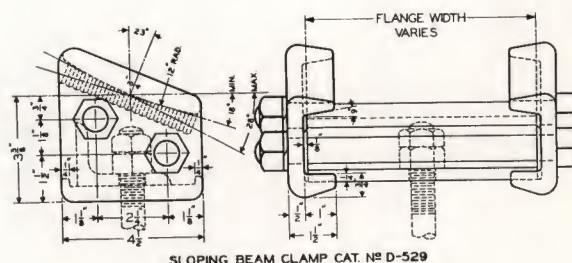
**No. 470 Rigid Hanger**



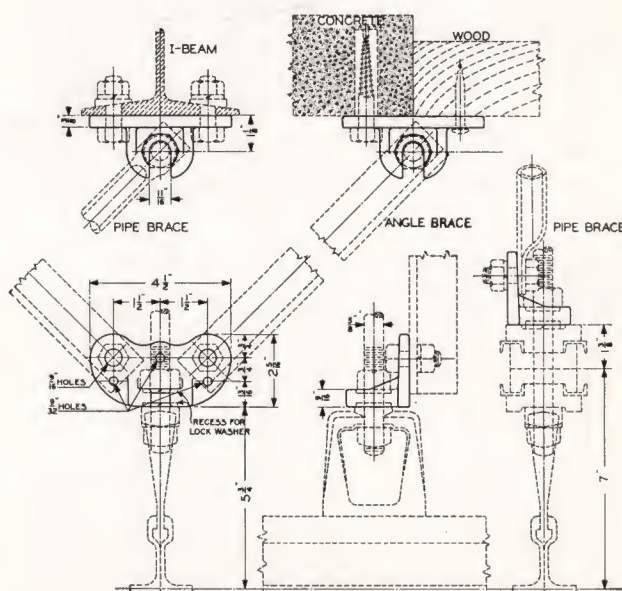
### No. 479 Beam Clamp



### No. 480 Beam Clamp



### No. 529 Sloping Beam Clamp



HANGER BRACE BRACKET CAT. N° D-418

### No. 418 Brace Bracket

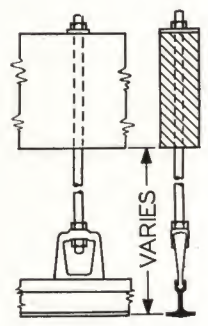
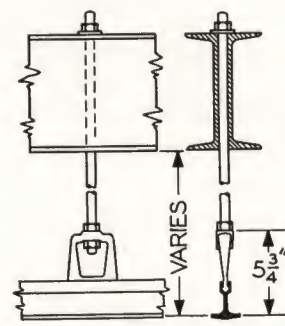
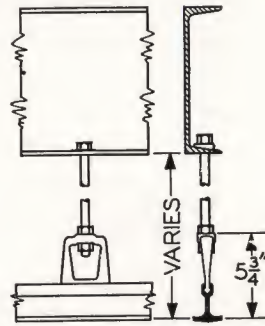
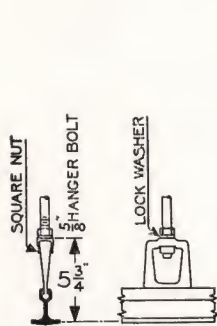
*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



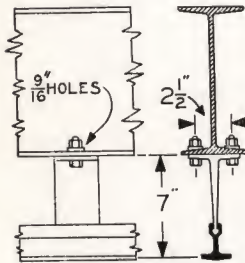
# Suspension Details for Standard MonoRail

Drawings below show typical methods of suspension employing most of the standard suspension fittings described in detail on pages 50 to 53. Essential dimen-

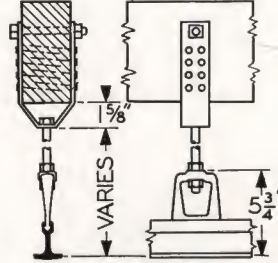
sions are given in most cases. See page 251 for other detail drawings.



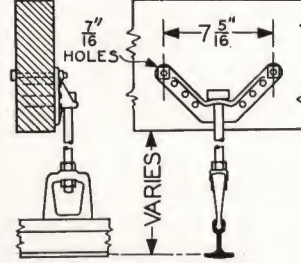
FORGED HANGER NUMBER 407



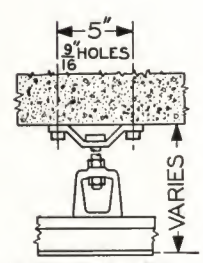
FORGED RIGID HANGER No 470



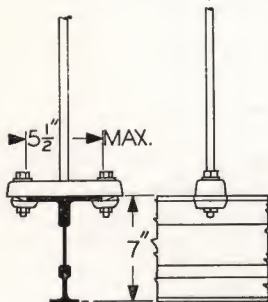
BRACKET No 404



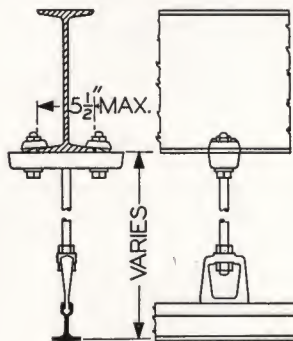
BRACKET No 419



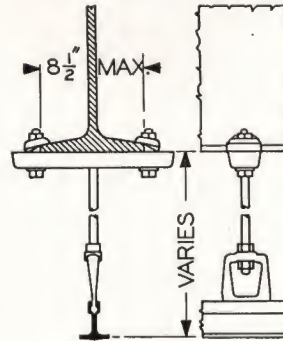
CLEAT No 453



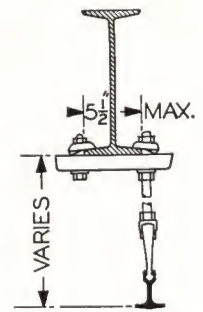
CLAMP No 479



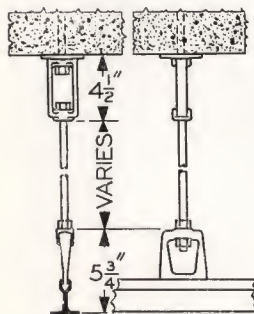
I-BEAM CLAMP No 479



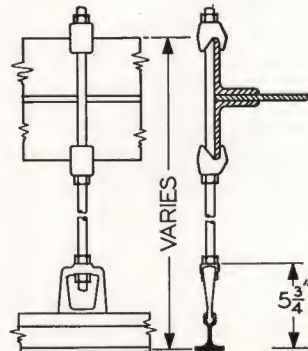
I-BEAM CLAMP No 480



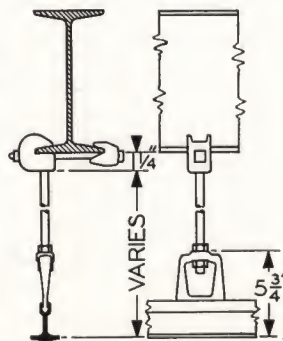
OFFSET CLAMP No 479



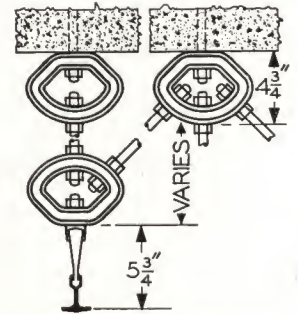
CEILING BUCKLE No 472



FLANGE CLAMP No 486



No. 456 AND No. 486 FLANGE CLAMPS

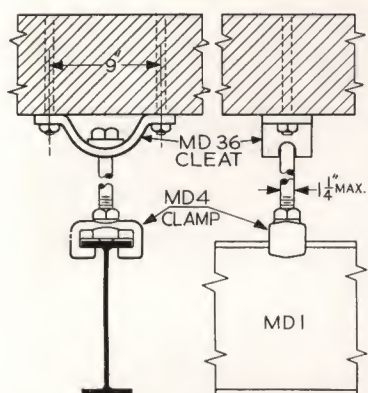


SUSPENSION BUCKLE No 455

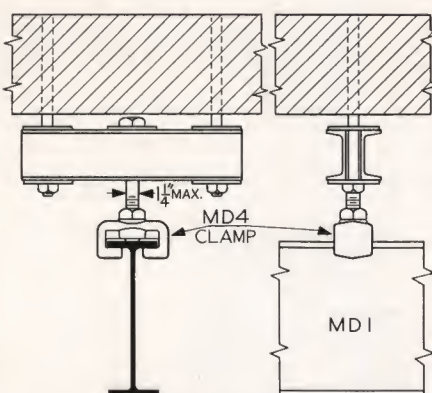
Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



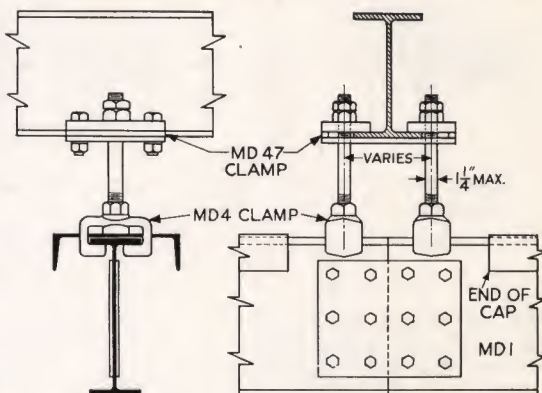
# Suspension Details for RailMaster Track



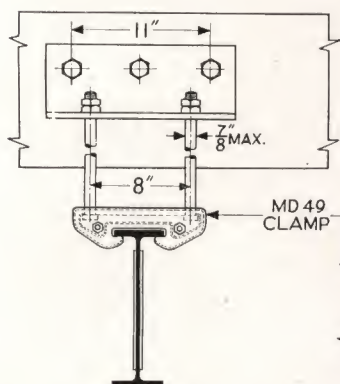
No. MD-36 CEILING CLEAT



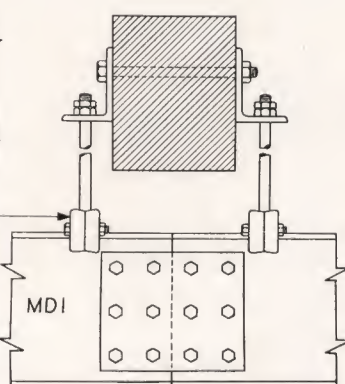
DOUBLE CHANNEL BRACKET



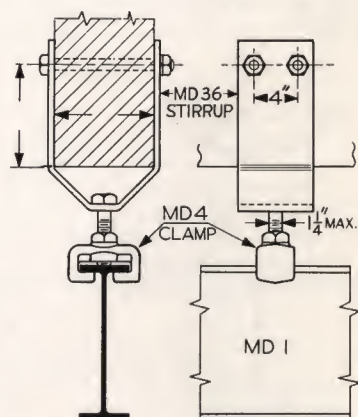
No. MD-47 BEAM CLAMP



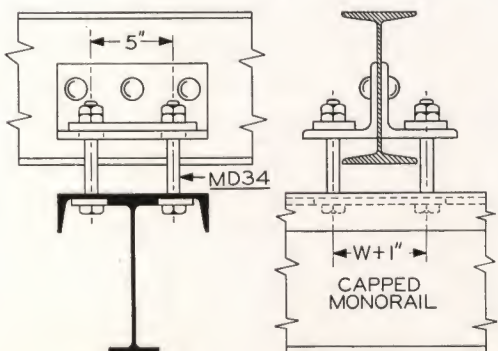
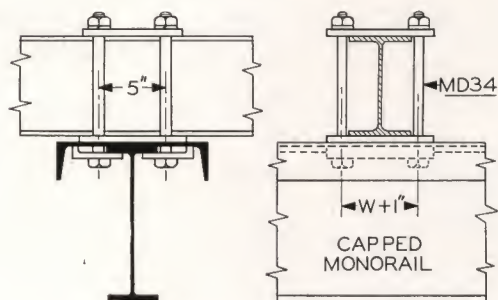
No. MD-49 RAIL CLAMP



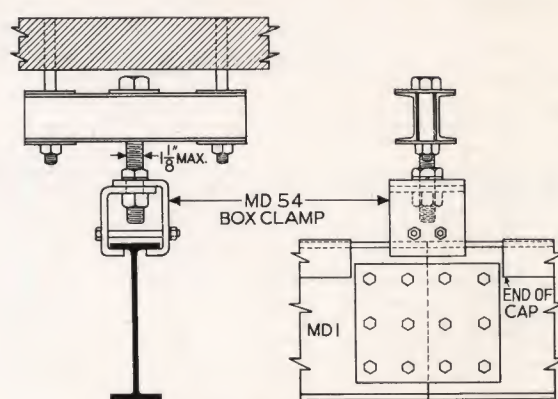
No. MD-36 CEILING CLEAT



No. MD-36 STIRRUP



TYPICAL BOLT SUSPENSION



No. MD-54 BOX CLAMP

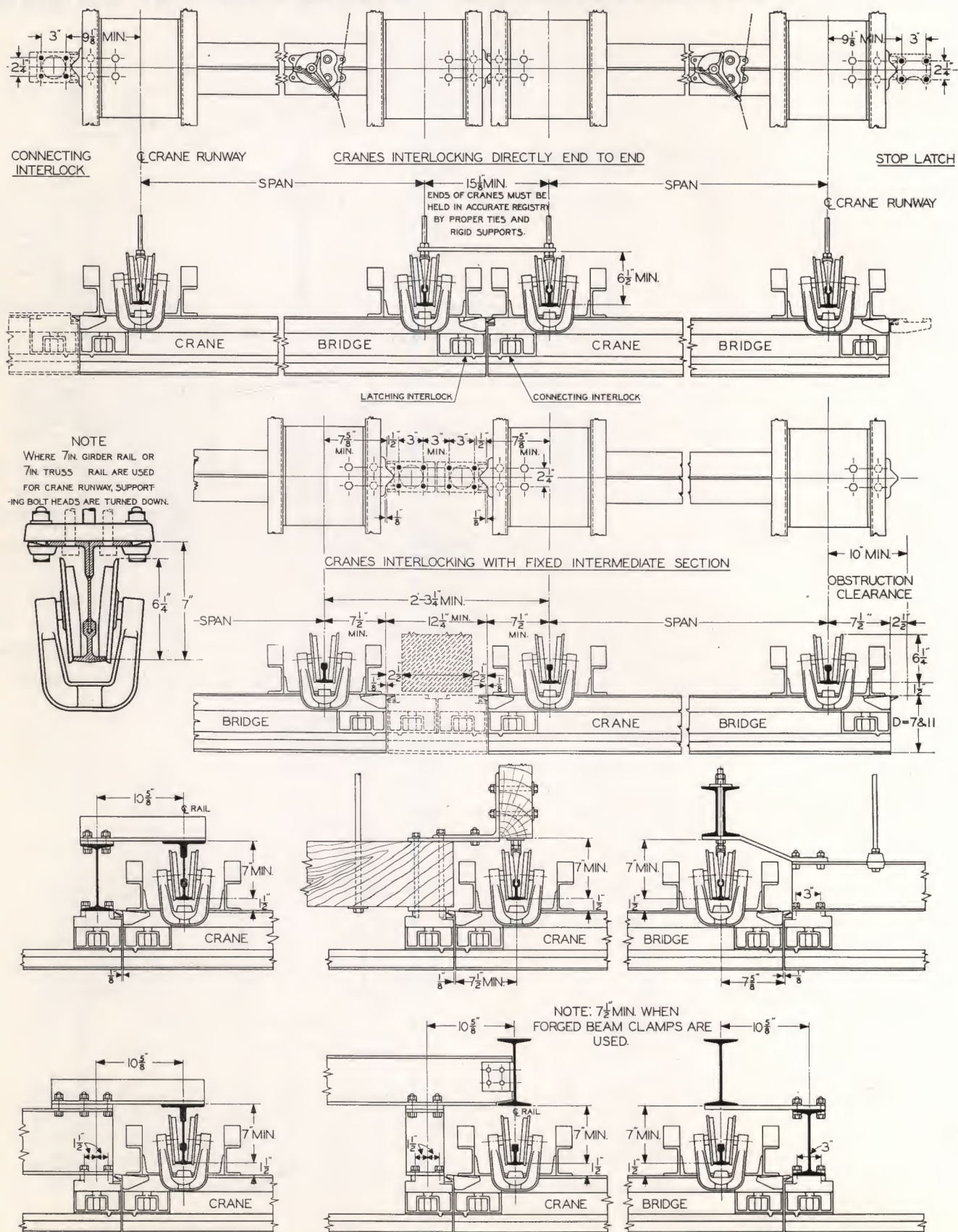
(See pages 131 and 132 for other clamps )

The above details show various types of RailMaster Suspension Equipment and methods of supporting RailMaster Track. Any deviation from the above will require contact with the home office engineering staff for certified clearance details.

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Crane Data — Standard Line



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



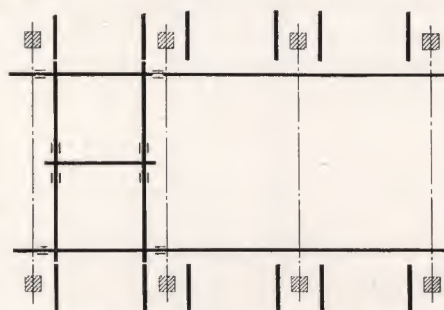
## Crane Data (Continued)

General information on Standard MonoRail Cranes is given on pages 99 to 124.

Minimum clearances for cranes interlocking directly with each other are shown on the opposite page which also includes the minimum length of a fixed section of MonoRail between two interlocking cranes. The end clearance for latch and safety bolts is also shown. Where there is an increase in the overhang over the  $7\frac{1}{2}$ " furnished with standard cranes, this increase must be taken into consideration when figuring clearances.

Several suggestions for supporting crane interlocks on connecting MonoRail are given in these drawings. It is necessary that a rigid connection be made between the crane interlock and the crane runway rail. This will maintain the proper relation of interlock and crane end and prevent interference or too wide end clearance. It also prevents either the interlock or crane end from deflecting independently of each other as a capacity load approaches the break in the rail between the crane and connecting track.

Some side thrust occurs on connecting interlocks when the crane latch bolt is thrown into the interlock as a moving crane passes. Some lateral deflection is allowable and side bracing is unnecessary with the framing shown.

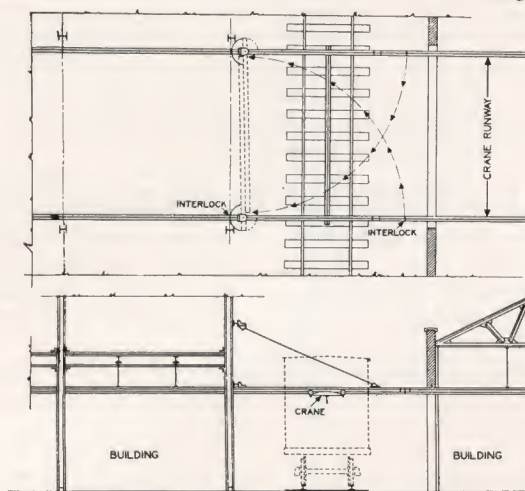


CRANE TRANSFER FOR STORAGE BUILDING  
ONE TRANSFER CRANE SERVES ALL BAYS

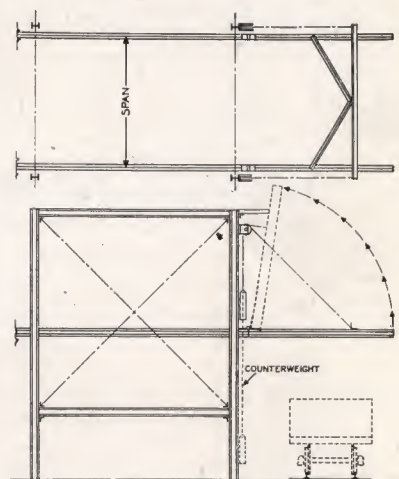


DOUBLE BRIDGE TRANSFER CRANE  
MAY BE USED WHERE LOADS ARE  
LIGHT AND MANY TO BE HANDLED.  
ALSO FOR FOUR POINT SUSPENSION  
RACKS

Fig. 255A



ILLUSTRATING METHOD FOR SPANNING PASSAGE WAY WITH SWINGING CRANE RUNWAY.



VERTICAL LIFTING CRANE RUNWAY WITH COUNTERWEIGHTS.

Fig. 255 B

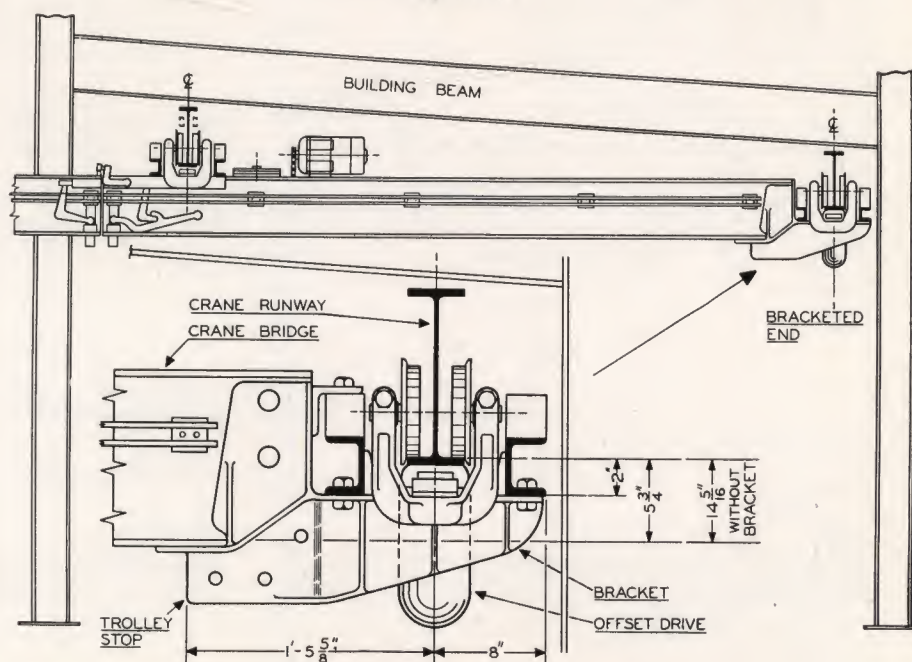


Fig. 255 C

Drawing above shows application under sloping beams, of RailMaster MonoTractor Cranes with bracketed end for maximum headroom clearance.

*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.*



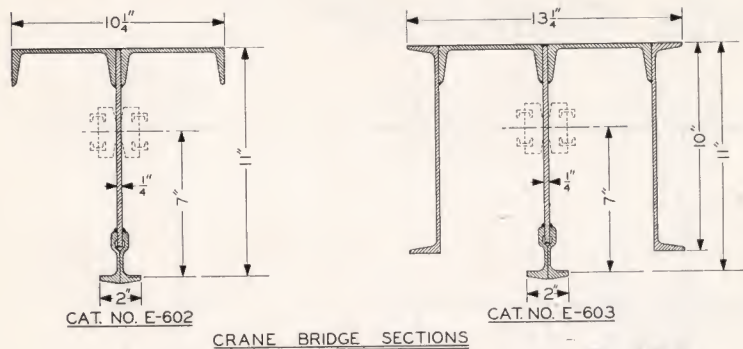


Fig. 257 B

## Bridge Sections for Standard Mono-Tractor Cranes

Dimensions in drawing to the left cover bridge sections used on Standard Mono-Tractor Cranes illustrated and described on pages 120 to 123. Load table below offers additional data for use in connection with these cranes.

### STANDARD MONOTRACTOR CRANE BRIDGE LOAD TABLE

Loads Concentrated      Spans Laterally Free      Deflection Less Than 1/360"      Based on Fibre Stress—16000 lbs.

Section No.	Weight Per Ft.	Complete Wgt.	Section Modulus	Spans in Feet											
				10	12	14	16	18	20	22	24	26	28	30	32
E602	31.2	44	17.16	11220	9275	7860	6800	5965	5285	4715	4240	3830	3470	3155	2870
E603	48.8	62	28.80	18895	15635	13275	11510	10110	8990	8060	7270	6595	6000	5485	5025
E610	62.4	91	34.32	21970	17990	15060	12850	11080	9630	8400	7500	6440	5620	4400	4240

Note: Complete weights are per foot and include bracing, shafts and conductors.

## Double Bridge Standard MonoTractor Cranes

The essential purpose of the Double Bridge Standard Crane is to permit mounting of a hoist unit between the two bridge members thereby conserving headroom. With this crane a one-ton electrical hoist hook can be

raised to within 2 1/2 feet of the ceiling line. Details of similar cranes for hand operation will be furnished on request. See page 120 for table covering No. 2294 and No. 2295 Double Bridge Cranes.

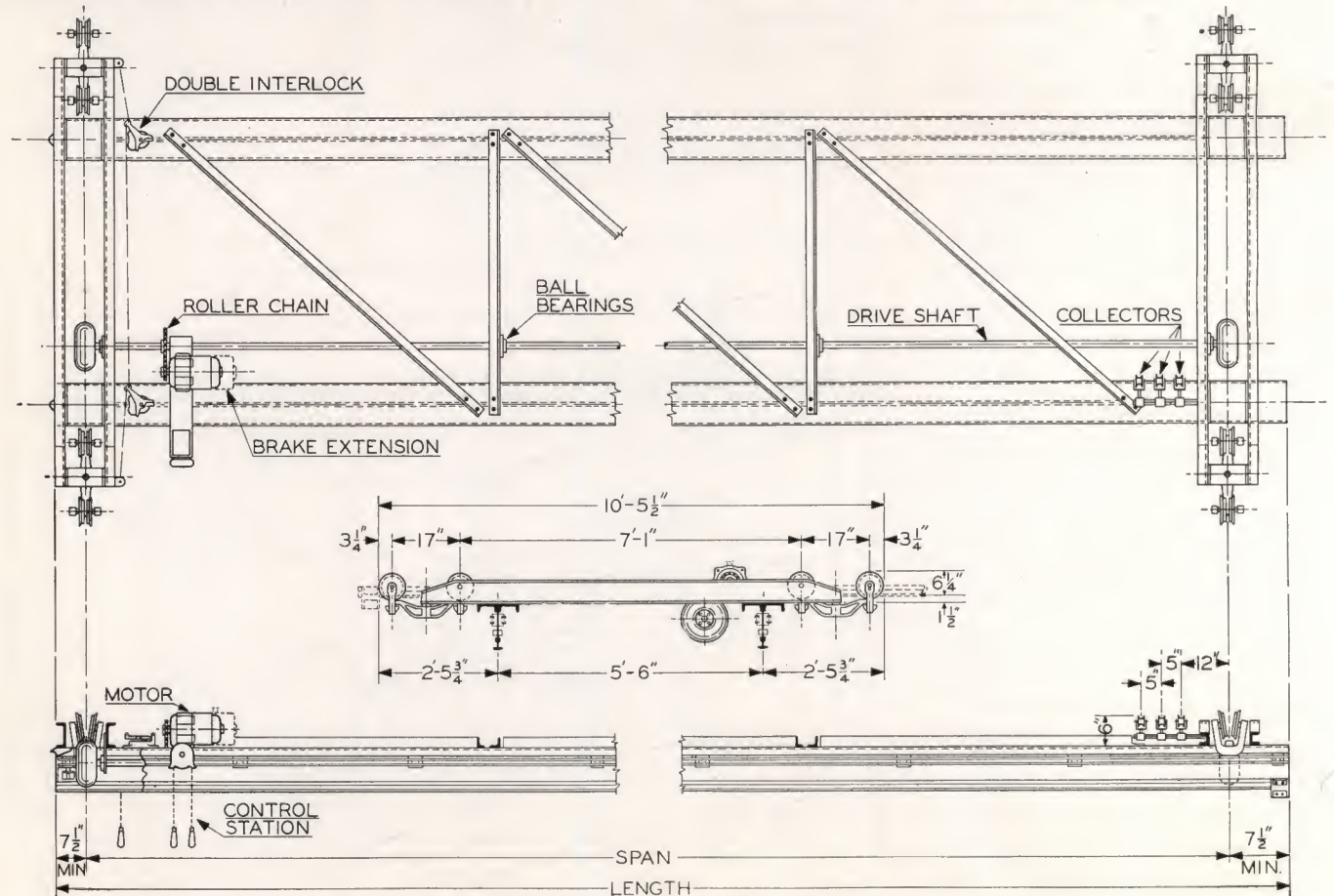


Fig. 256 B

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# RailMaster Crane Data

## DETAIL OF HAND OPERATED INTERLOCK

Illustration below covers dimensions of No. ME-9 Hand Operated Interlock together with No. ME-10 Connecting Interlock and No. ME-55 Bracket for

support and register of connecting track. Two cranes are shown interlocking directly by using an ME-10 Connecting Interlock on the one at the right.

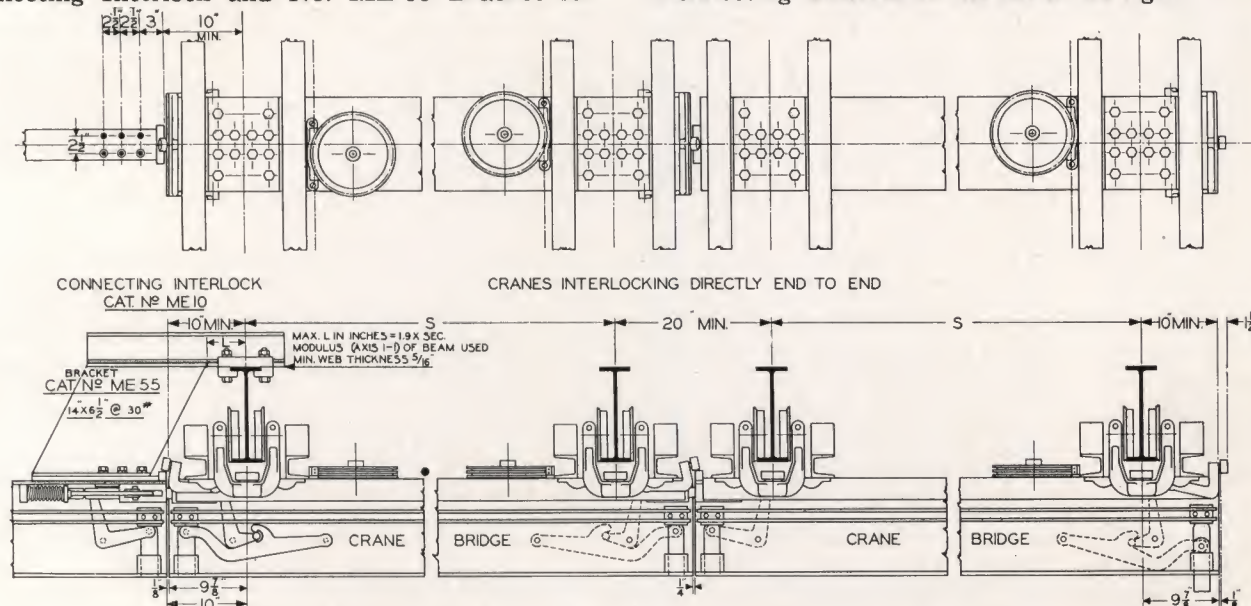


Fig. 257 A

## DETAIL OF CROSSOVER AND BRACKETS

Dimensions given below cover minimum requirements for No. ME-86 Crossover illustrated on page 155. No.

ME-56 Crossover Bracket and No. ME-57 Overhanging Bracket are also shown.

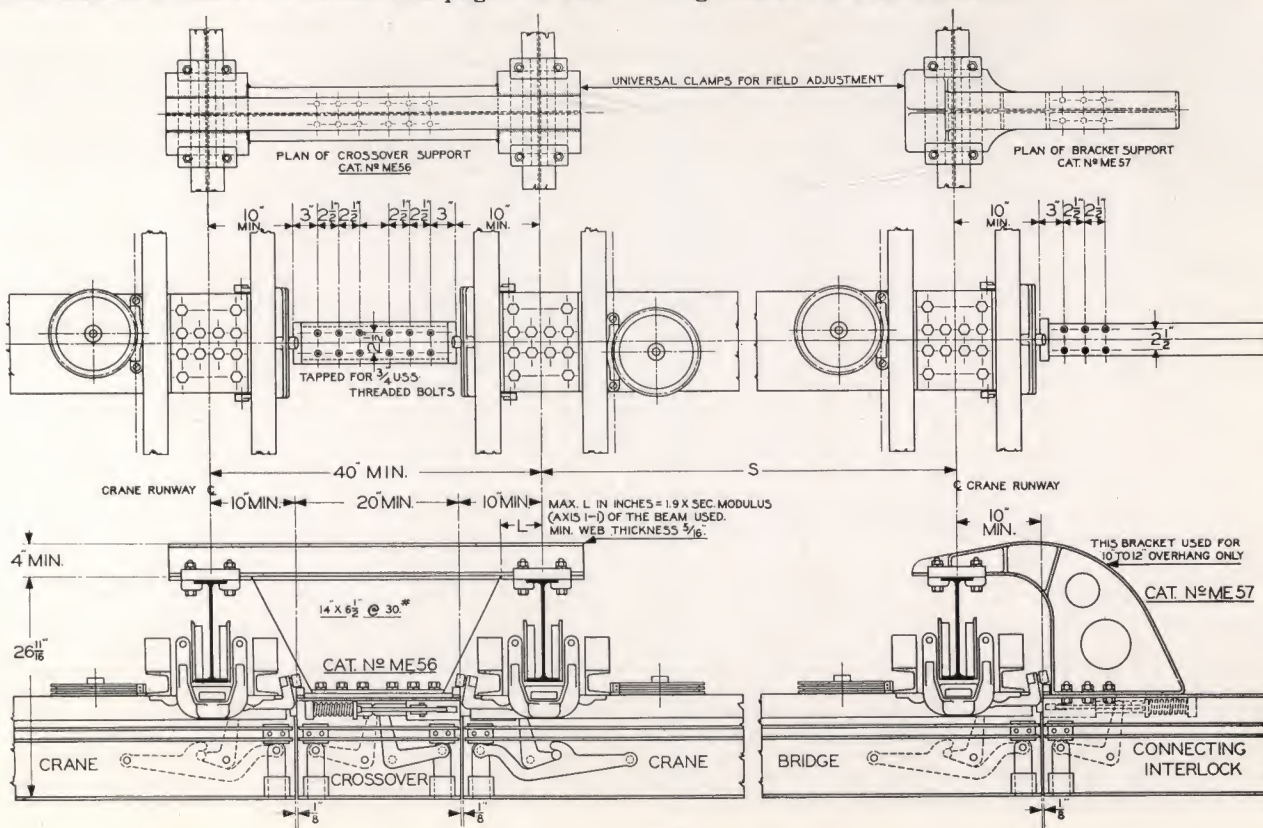


Fig. 257 B

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# GRADE-HORSEPOWER CHART

FOR DETERMINING MOTOR SIZE FOR A GIVEN TOTAL LOAD, GRADE AND SPEED, START WITH TOTAL LOAD, FOLLOW THE HORIZONTAL LINE TO THE RIGHT TO THE DIAGONAL GRADE LINE, FROM THIS POINT FOLLOW THE VERTICAL LINE DOWN TO MEET THE DRIVE EFFICIENCY LINE, THE PROPER POINT FOR THE DRIVE MOTOR IS GIVEN IN THE AREA BETWEEN THE HEAVY DIAGONALS. LINES REPRESENTING GRADES HAVE ALL BEEN SHIFTED SO THAT THE RESULTS INCLUDE A ROLLING FRICTION OF 3/4% OF THE TOTAL LOAD. FIGURE THE EFFICIENCY OF MV-2 AND 2275 MONOTRACTORS AT 90%. ALL OTHER MONOTRACTOR UNITS AT 85% EFFICIENCY.

TOTAL LOAD IN POUNDS INCLUDING EQUIPMENT

PERCENT OF GRADE

EFFICIENCY OF DRIVE

100% 95% 90% 85% 80%

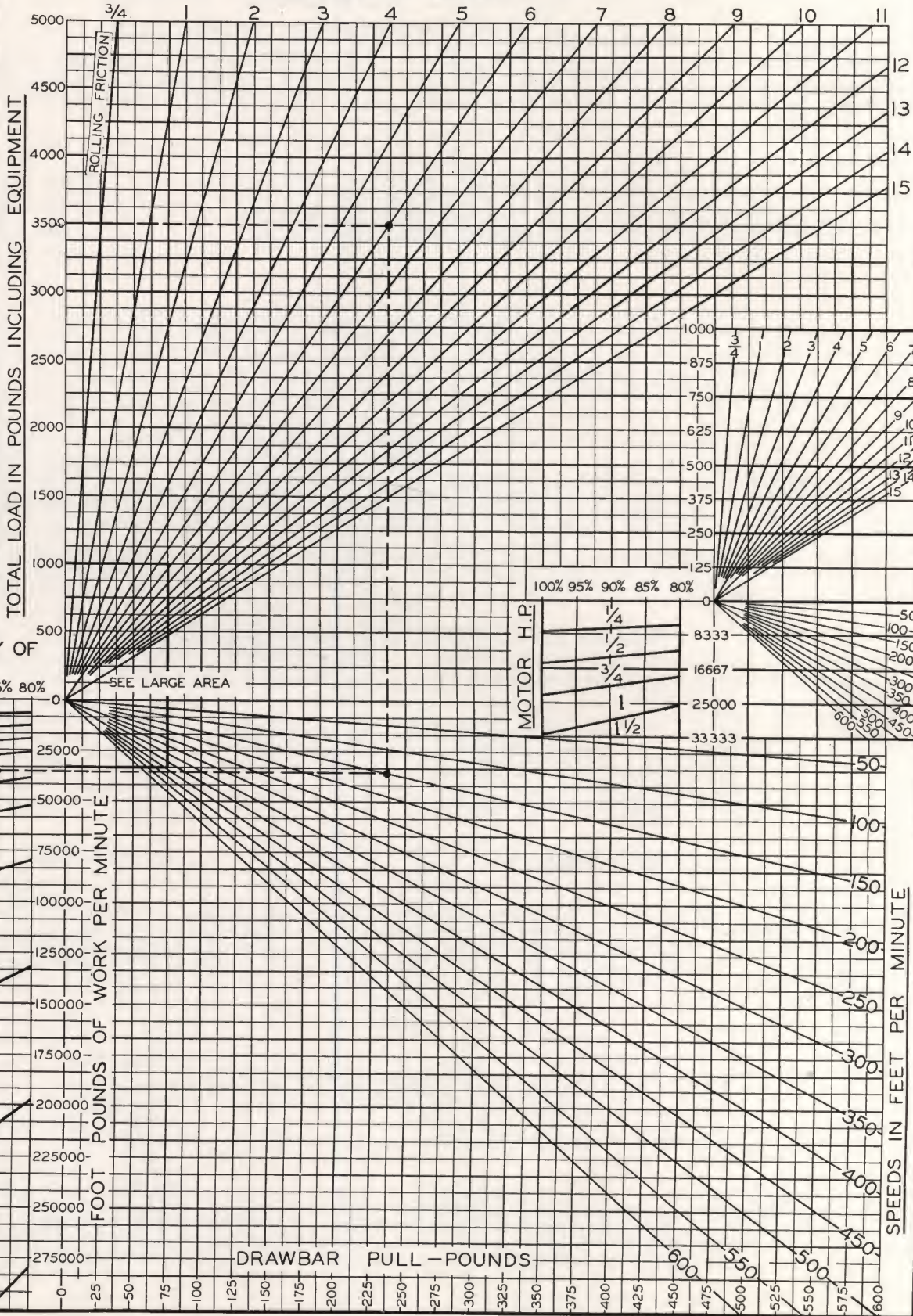
MOTOR H.P. FOR VARIOUS EFFICIENCIES

SEE LARGE AREA

FOOT POUNDS OF WORK PER MINUTE

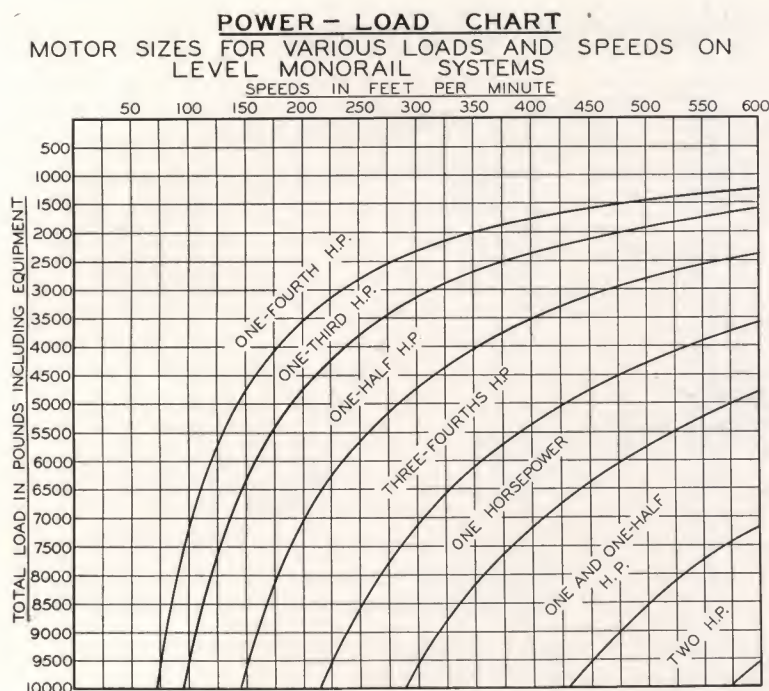
DRAWBAR PULL - POUNDS

SPEEDS IN FEET PER MINUTE



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.





## MonoTractor Power Charts

The charts on this and the opposite page offer simple methods for determining the proper size motor for use on a MonoTractor drive unit to meet variations in load, grade and travel speed requirements. The chart on this page is for use when no grade is involved in the layout.

After finding the proper horse power, reference to tables given opposite each MonoTractor shown on pages 174 to 181, will indicate the available unit that will meet all the demands.

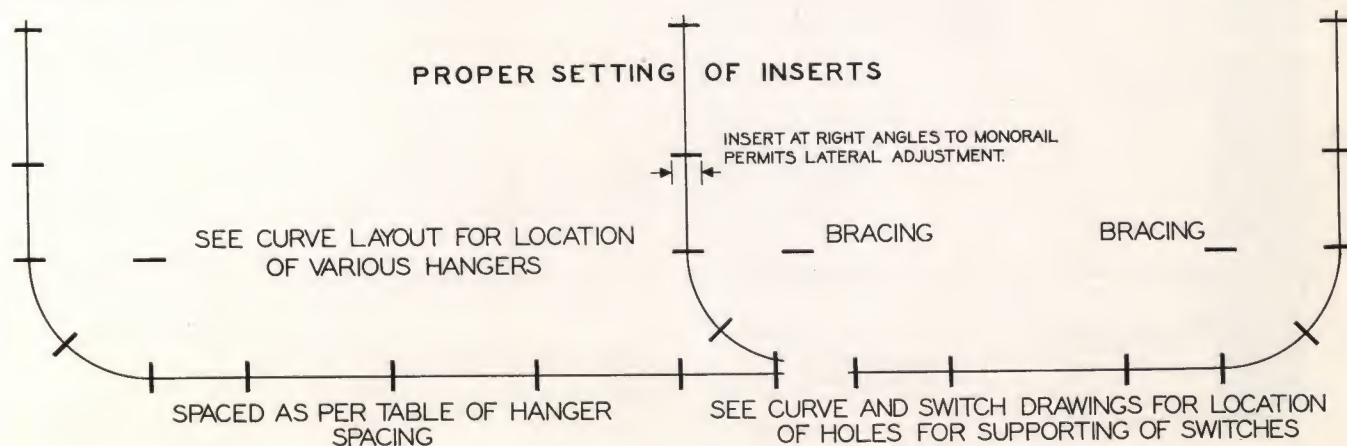
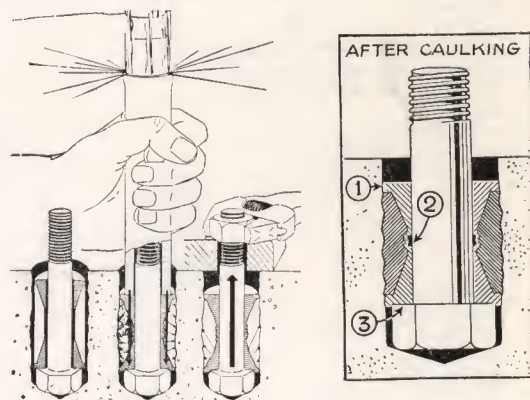
Where there is any doubt concerning ultimate performance, use the next higher size motor recommended.

## Attaching to Concrete

Where it is not possible to use through-bolts for supporting MonoRail equipment from concrete or masonry ceilings and it is necessary to use expansion shields, the concrete should be examined carefully to assure that it has sufficient strength to hold the shield.

It is imperative that the hole be drilled to the proper size, that shield parts be properly assembled in the hole and that the expansion bolt be tightened sufficiently to expand the plug fully in the hole. The use of two or more shields at each suspension point is recommended.

When the MonoRail layout is completed before the building is started, the placing of inserts in the concrete forms will effect a considerable saving. Due to shifting during construction allowance should be made for several inches of lateral adjustment by placing inserts at right angles to the center line of the proposed track. Spacing depends upon the loads to be handled and the equipment involved.



*Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings*



# Typical Installation Details. 1.

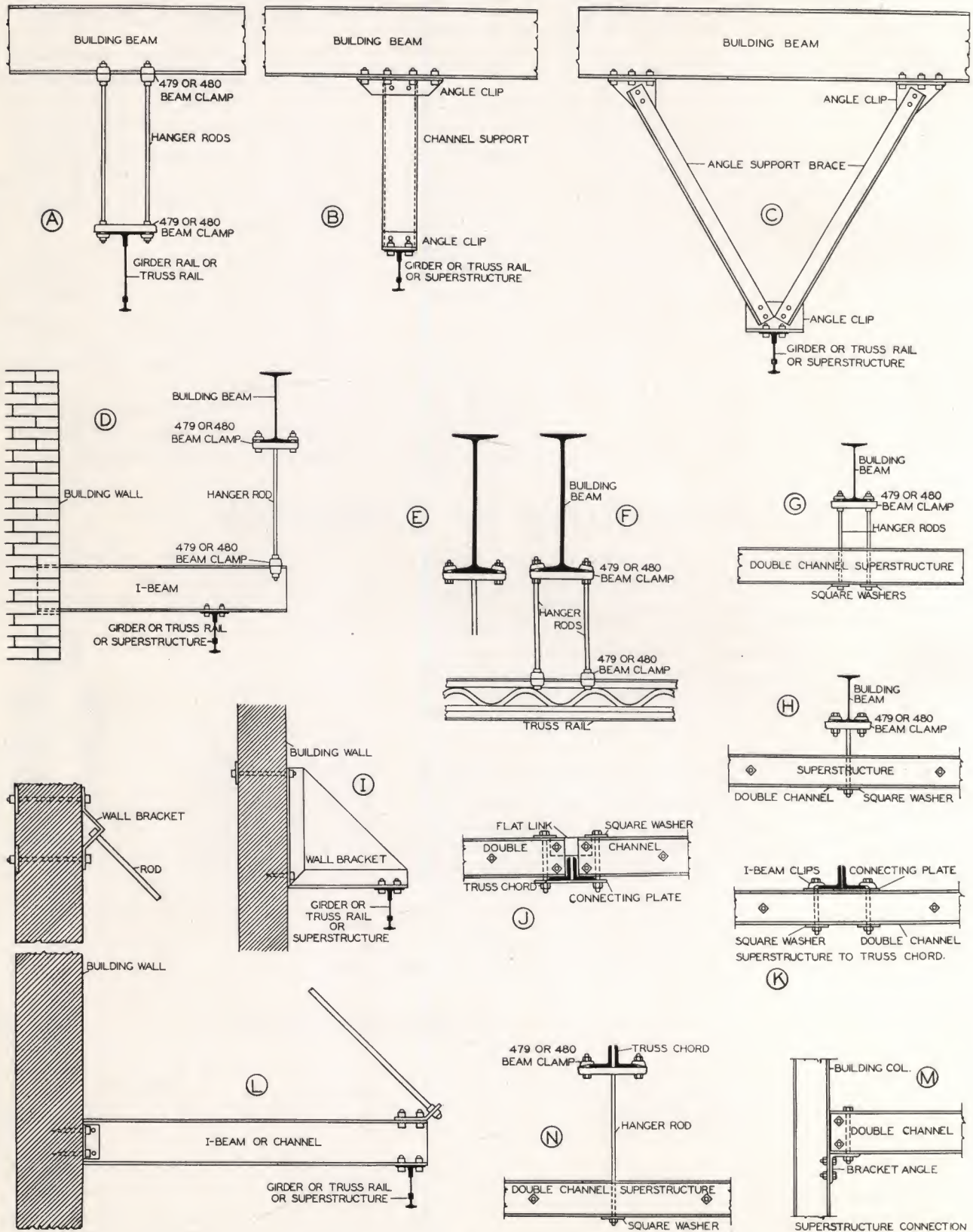
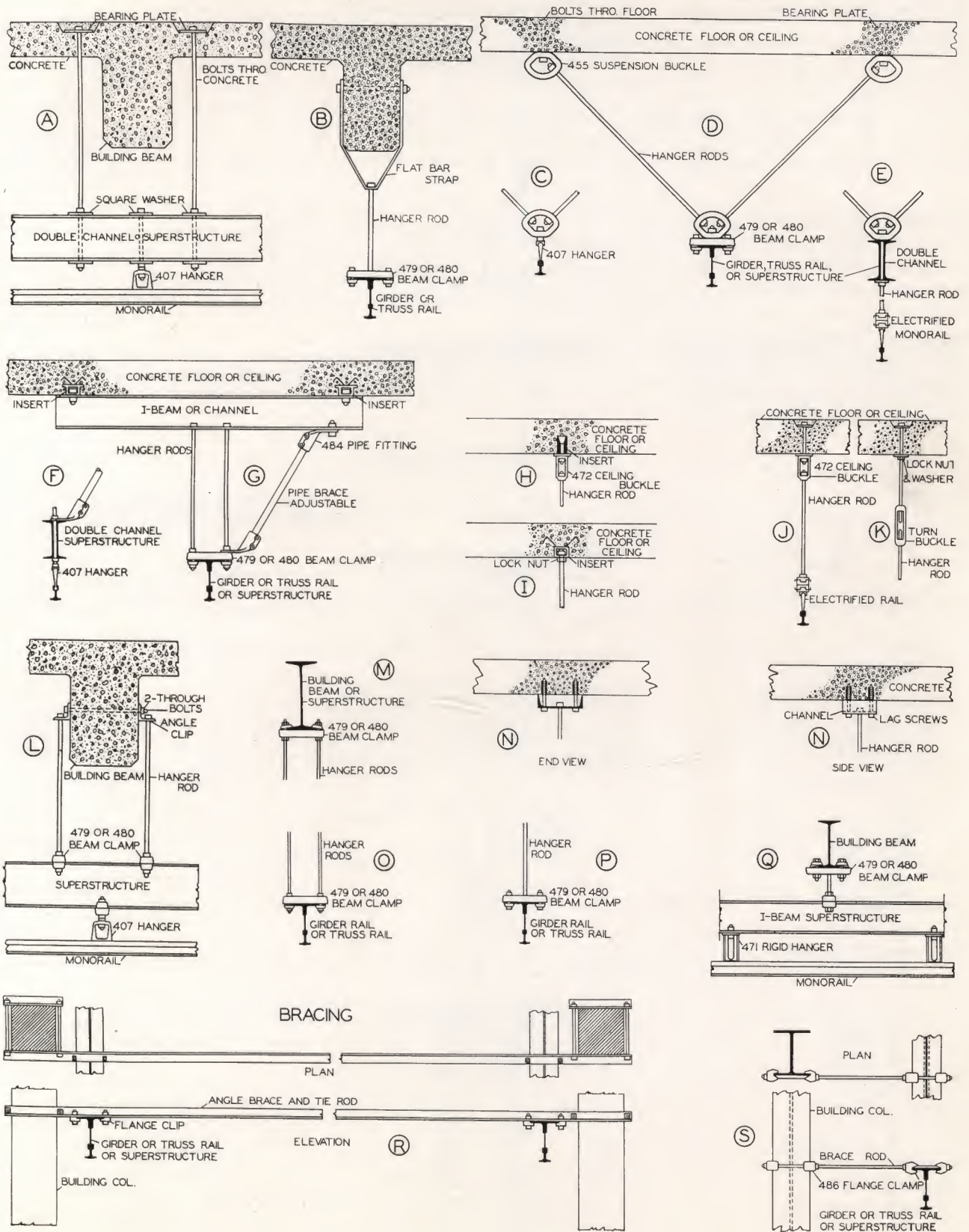


Fig. 260

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



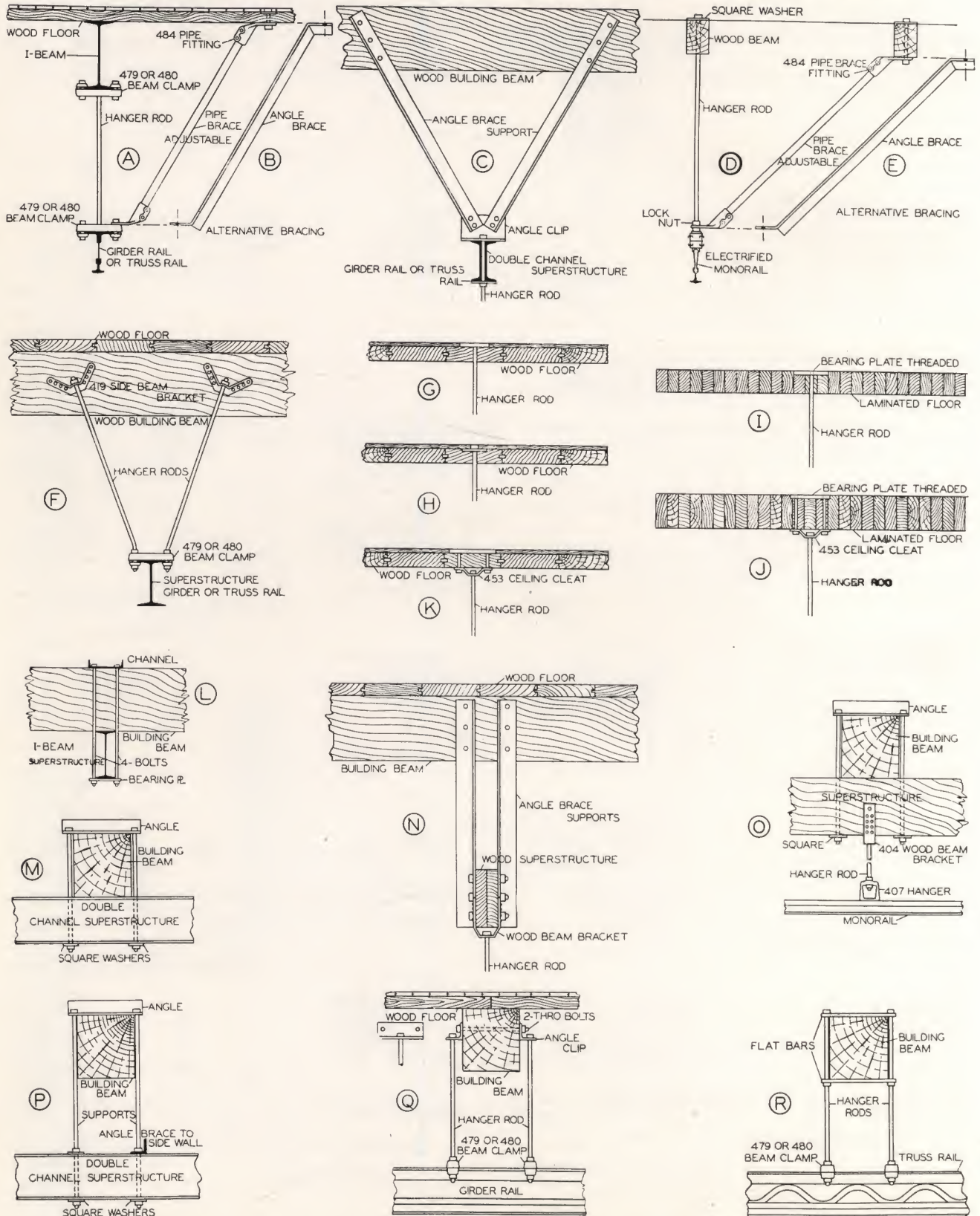
# Typical Installation Details. II.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished or working drawings.



# Typical Installation Details. III.



Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# Double Channel Superstructure

Two channels back to back with  $\frac{3}{4}$  inch spacers make an excellent structural support for long runs of standard MonoRail. Hanger Bolts are supported from washers at the top and extend between the channels to the forged hangers below. It is not necessary that hangers be located at given points since hanger bolts may pass between the channels anywhere except at spacers or splice plates. The bottom flanges of the channels make a rigid flat surface to which switches and cross-overs may be bolted by inexpensive connections. Hanger rods to supporting beams in the building may be run down between the channels at any point along the line.

This makes careful exact measurements of every building beam location unnecessary, sometimes saving

expensive delays which might otherwise be necessary in order to get complete accurate field information before completing superstructure layouts. The method of framing for connecting runs allows added flexibility as the superstructure for a branch line may be attached anywhere except where a splice plate or hanger rod might interfere.

The general type of framing recommended is shown below. Laps may be located anywhere between the quarter point of the span as shown, to one-sixth of the span away from the support. When the laps are located in this way and detailed as shown below, the carrying capacity is increased approximately 25% over superstructure with butt joints at every support. Load Tables for Double Channels are given on the next page.

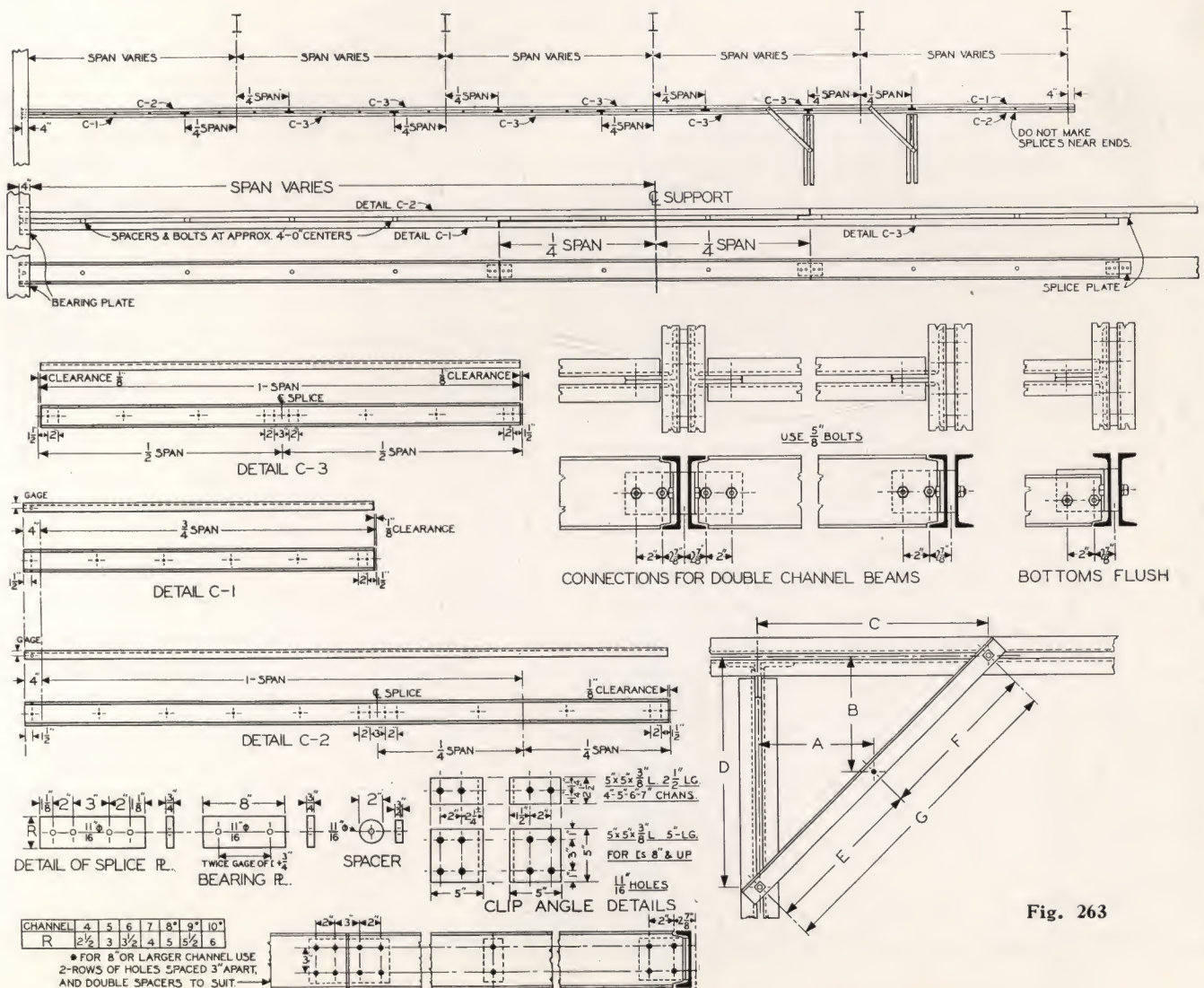


Fig. 263

Dimensions given on this page are for estimating purposes only. Certified blueprints will be furnished for working drawings.



# SUPERSTRUCTURE LOAD TABLE

CONCENTRATED LOADING  
LATERALLY FREE — LATERALLY FIXED

DEPTH		WEIGHT		CONCENTRATED — LATERALLY FREE																				LOADING — LATERALLY FIXED																			
SPAN IN FEET →		Z-1		4	6	8	10	12	14	16	18	20	22	24	4	6	8	10	12	14	16	18	20	22	24																		
SINGLE CHANNELS	3"	4.1#	1.1	1150	520										1650	1100	800	650																									
		5.0#	1.2	1300	620										1850	1200	900	700																									
	4"	5.4#	1.9	2200	1050										2850	1900	1400	1150	950																								
		6.25#	2.1	2450	1150	650									3100	2100	1550	1250	1050																								
	5"	6.7#	3.0	3600	1800	1000									4450	2950	2200	1800	1500	1250																							
		9.0#	3.5	4350	2250	1250									5300	3550	2650	2100	1750	1500																							
	6"	8.2#	4.3	5400	2750	1550									6500	4350	3250	2600	2150	1850	1600																						
		10.5#	5.0	6500	3350	1950	1200								7550	5000	3750	3000	2500	2150	1900																						
	7"	9.8#	6.0	7950	4200	2450	1550								9050	6000	4500	3600	3000	2600	2250	2000																					
		12.25#	6.9	9300	5000	3000	1900								10300	6850	5150	4100	3450	2950	2600	2300																					
DOUBLE CHANNELS	8"	11.5#	8.1	11000	5900	3550	2250								12100	8100	6050	4850	4050	3450	3050	2700	2400																				
		13.75#	9.0	12500	6800	4100	2650								13450	8950	6700	5400	4500	3850	3350	3000	2700																				
	9"	13.4#	10.5	14500	8000	4800	3050	2050							16750	10500	7900	6300	5250	4500	3950	3500	3150	2850																			
		15.0#	11.3	16000	8800	5400	3500	2400							16900	11250	8450	6750	5650	4850	4200	3750	3400	3050																			
	10"	15.3#	13.4	19200	10750	6700	4350	3000							20050	13400	10050	8050	6700	5750	5000	4450	4000	3650																			
		20.0#	15.7	22750	13000	8000	5350	3650							23550	15700	11750	9400	7850	6750	5900	5250	4700	4300																			
	12"	20.7#	21.4	31500	18500	11500	7900	5500	4000						32050	21350	16000	12800	10700	9150	8000	7100	6400	5800	5350																		
		25.1#	23.9	35500	21000	13000	8850	6150	4450						35900	23900	17950	14350	11950	10250	8950	7950	7200	6500	6000																		
	STANDARD I-BEAMS	3"	4.1#		3300	2000	1350	980								3300	2200	1600																									
			5.0"		3700	2200	1450	1000								3700	2400	1800																									
4"		5.4#		5700	3650	2450	1750	1280							5700	3800	2800	2300																									
		6.25"		6200	4000	2700	1980	1400							6200	4200	3100	2500																									
5"		6.7#		8900	5800	4000	2850	2100	1600	1250					8900	5900	4400	3600	3000	2500	2200																						
		9.0"		10600	6850	4720	3450	2550	1950	1520					10600	7100	5300	4200	3500	3000	2600	2300																					
6"		8.2#		13000	7900	5800	4250	3150	2400	1980	1480				13000	8700	6500	5200	4300	3700	3300	2900																					
		10.5"		15100	10000	6700	5000	3780	2900	2300	1800				15100	10000	7500	6000	5000	4300	3800	3400	3000																				
7"		9.8#		18100	12000	8450	6250	4650	3650	2850	2320	1850			18100	12000	9000	7200	6000	5200	4500	4000	3600																				
		12.25"		20600	13700	9750	7250	5550	4350	3480	2750	2050			20600	13700	10300	8200	6900	5900	5200	4600	4100	3800																			
C-B SECTIONS	8"	11.5#		24200	16200	11500	8500	6500	5050	4080	3320	2400	2300		24200	16200	12100	9700	8100	6900	6100	5400	4800	4400																			
		13.75#		26900	17900	13000	9650	7400	5800	4650	3700	3060	2850		26900	17900	13400	10800	9000	7700	6700	6000	5400	4900																			
	9"	13.4#		31500	21000	15150	11250	8600	6800	5400	4300	3550	2950	2380	31500	21000	15800	12600	10500	9000	7900	7000	6300	5700	5300																		
		15.0"		33800	22500	16400	12300	9500	7500	6000	4900	4000	3300	2750	33800	22500	16900	13500	11300	9700	8400	7500	6800	6100	5600																		
	10"	15.3#		40100	26800	19780	14800	11500	9200	7350	6000	4950	4150	3500	40100	26800	20100	16100	13400	11500	10000	8900	8000	7300	6700																		
		20.0"		47100	31400	23300	17500	13150	11000	8800	7250	6000	5050	4250	47100	31400	23500	18800	15700	13500	11800	10500	9400	8600	8000																		
	12"	20.7#		64100	42700	32000	24550	19700	15450	12650	10450	8700	7350	6250	64100	42700	32000	25600	21400	18300	16000	14200	12800	11600	10700																		
		25.1"		71800	47800	35900	27400	21900	17250	14100	11650	9700	8200	6950	71800	47800	35900	28700	23900	20500	17900	15900	14400	13000	2000																		
	C-B SECTIONS	3"	5.7#	1.7	2350	1250	750									2500	1650	1250	1000																								
			6.5"	1.8	2500	1350	850									2650	1800	1350	1100																								
4"		7.7#	3.0	4300	2450	1500	1000								4450	3000	2250	1800	1500																								
		9.5"	3.3	4750	2750	1700	1150								5000	3350	2500	2000	1650																								
5"		10.5"	4.8	7100	4150	2650	1780	1250							7250	4850	3650	2900	2400	2050																							
		12.25"	5.4	8050	4750	3050	2100	1450							8100	5400	4050	3250	2700	2300																							
6"		12.5#	7.3	10900	6600	4300	2950	2100	1550						10900	7250	5450	4350	3650	3100	2750																						
		14.75"	7.9	11900	7250	4750	3300	2350	1750						11900	7950	5950	4750	3950	3400	3000																						
7"		15.3"	10.4	15500	9650	6400	4500	3200	2350	1800					15550	10350	7750	6200	5200	4450	3900	3450																					
		17.5"	11.1	16700	10350	6950	4900	3550	2600	2000					16700	11150	8350	6700	5550	4750	4150	3700																					



## LOAD TABLES FOR WOOD BEAMS

BEAMS ARE COMMERCIAL SIZES, TABLES ARE BASED UPON 1200lb. FIBRE STRESS AND SIMPLE BEAM ACTION

CONCENTRATED LOADS													UNIFORMLY DISTRIBUTED LOADS												
SIZE OF TIMBER	SPAN IN FEET												SIZE OF TIMBER	SPAN IN FEET											
	6	8	10	12	14	16	18	20	22	24	6	8		10	12	14	16	18	20	22	24				
2 x 6	678	503	396										2 x 6	1130	838	661									
2 x 8	1205	898	712	586	495								2 x 8	2011	1497	1186	976	825							
2 x 10		1448	1150	950	804	695	608						2 x 10		2413	1915	1582	1340	1158	1014					
2 x 12		2145	1681	1388	1197	1028	902	800	717				2 x 12		3544	2818	2330	1978	1713	1503	1334	1195			
2 x 14			2335	1932	1644	1425	1253	1115	1000	904			2 x 14			3690	3219	2739	2374	2088	1858	1667	1506		
3 x 6	995	738	593										3 x 6	1658	1231	972									
3 x 8	1857	1382	1095	901	762								3 x 8	3094	2302	1825	1502	1270							
3 x 10		2228	1768	1460	1237	1068	936						3 x 10		3711	2947	2432	1261	1780	1559					
3 x 12		3270	2597	2150	1825	1583	1388	1232	1105				3 x 12		5448	4330	3582	3042	2635	2312	2052	1837			
3 x 14			3590	2972	2530	2190	1928	1714	1540	1390			3 x 14			5983	4956	4215	3651	3213	2856	2565	238		
4 x 6	1394	1034	876										4 x 6	2322	1723	1360									
4 x 8	2600	1938	1535	1263	1068								4 x 8	4336	3227	2557	2105	1779							
4 x 10		3118	2475	2044	1734	1496	1310						4 x 10		5198	4125	3407	2888	2493	2183					
4 x 12		4610	3635	3015	2555	2212	1944	1725	1545				4 x 12		7687	6062	5014	4259	3686	3239	2873	2572			
4 x 14			5015	4160	3540	3070	2700	2400	2156	1946			4 x 14			8378	6936	5899	5117	4503	4001	3591	3243		
4 x 16				5500	4690	4065	3580	3192	2870	2597			4 x 16				9174	7814	6779	5971	5320	4784	4329		
6 x 6	2192	1625	1284										6 x 6	3652	2709	2139									
6 x 8	4085	3040	2410	1984	1676								6 x 8	6806	5068	4013	3305	2792							
6 x 10		4900	3888	3210	2720	2350	2055						6 x 10		8162	6479	5348	4534	3915	3426					
6 x 12		7200	5760	4730	4015	3475	3054	2710	2425				6 x 12		11999	9531	7886	6694	5795	5089	4515	4042			
6 x 14			7900	6540	5530	4825	4242	3773	3385	3060			6 x 14			13172	10901	9272	8038	7069	6290	5642	5098		
6 x 16				8650	7360	6400	5630	5010	4510	4085			6 x 16				14418	12273	10656	9387	8360	7520	6804		

THESE TABLES ARE FOR BEAMS FIXED Laterally SPANS TO RIGHT OF HEAVY VERTICAL LINES SHOULD NOT BE USED WITHOUT SIDE BRACING. LOADS TO THE RIGHT AND ABOVE THE DOTTED LINE WILL GIVE EXCESSIVE DEFLECTION.

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